











### 3. Perspective

For a deeper analysis of the sector, we intend to follow in the first instance a participatory approach, which designates any arrangement by which different types of actors contribute more or less directly to a given process (Den Hove, 2003). The aim of this approach is to involve all stakeholders through surveys in identifying road transport problems and to express their concerns, gather information, rephrase the dissatisfaction and weaknesses of the situation and compare them the list obtained from our study. This is technique seems to be the most adapted to the complexity of the theme, so we will establish questionnaires based on the list of problems obtained from the literature review, these questionnaires will be addressed to the stakeholders of the sector, which we have grouped in the table (see Annex 2). In the second step, we will proceed with a prioritization in order to find the most critical problems and thus define the problems to solve first. Among the methods used for the prioritization stage, we find the multi-criteria methods. Our choice is based on these methods as a simple analysis "cost-benefit" shows quickly its inadequacy to deal with the complex problems that confront a sector (Mena,2000) such as the road transport sector, not to mention the non-commensurable side of certain criteria evaluation and the fact that they may be contradictory. It is therefore necessary to use methods that can take account of several criteria (Ash and all, 2005). Among these methods are: The weighted sum of scores (Cheng and Chou., 2011), the multiplication of ratios (Bustince et al, 2013), Multiple Attribute Utility Theory (Kailiponi, 2010), Electra I, II, III, IV, Prometheus I and II (Yu et al, 2013), Naiade (Munda, 2006), goal programming (Aouni, 2014), STEM (Jeong and Kim,2005), and other known approaches such as Branch and Bound. The choice of an aggregation method depends on the technical means available, the type and quantity of information that is provided or collected, and the type of desired result (Cornillon and Matzner-Lober, 2007).

### Conclusion

The importance of the transport sector can be seen in terms of its economic and social position, since it represents 6% of GDP and 9% of the value added of the tertiary sector and employs 10% of the urban workforce (DEPF, 2013). The sector, despite its importance, suffers from several difficulties on several levels. This statement was confirmed by the literature review we conducted. In order to carry out this analysis, we first classified the components of the road sector according to the Ishikawa diagram, which allowed us to sketch a study framework, and then, using the 6W's tool, we tried to list all the problems in relation to each component and finally for a better clarity we used the affinity diagram which allows to model, group and prioritize all the problems. The work that has been presented is a draft that will certainly help in the next in-depth analysis of the road sector. Thus, we intend to proceed with a participatory approach through surveys addressed to stakeholders in the sector. These surveys will be followed by a prioritization in order to find the most critical problems and thus to define the problems to be solved first on the basis of the multicriteria analysis.

### Annex 1

		<i>Problems identified</i>
Machine	Vehicle	<ul style="list-style-type: none"> <li>• Extremely old park with very high pollution and maintenance costs</li> <li>• Inadequacy of the park in the face of increasing demand (personal transport)</li> <li>• Chronic weakness of the Moroccan pavilion in international road transport flows</li> <li>• Plethora of informal transport fleet</li> <li>• Deplorable state of the vehicles put at the service of citizens (lamentable mechanical state, dirt, ...)</li> <li>• Weak control of public transport vehicles</li> <li>• Lack of safety for bus users</li> <li>• Lack of truck safety devices (such as door opening signal)</li> </ul>
	Signalization	<ul style="list-style-type: none"> <li>• Poor management of traffic lights in different intersections of the city</li> <li>• Lack of personnel specializing in the maintenance of traffic lights.</li> <li>• Budget allocated to the sector is insufficient.</li> <li>• Marking on the ground, regulatory, directional and tri color signs are often faulty and in insufficient quantity.</li> <li>• Theft or destruction of signs, especially outside urban areas and in conurbations where it is difficult to control them.</li> </ul>

Milieu	Lighting	<ul style="list-style-type: none"> <li>• Public lighting suffers from technical, environmental and economic problems, not to mention the safety involved in the quality of visibility of faulty equipment</li> <li>• Weakness of the quantity and quality of public lighting system installations and their maintenance.</li> </ul>
	Roads and highways	<ul style="list-style-type: none"> <li>• Slight degradation of the quality of the paved road network.</li> <li>• Rarity of lanes reserved for both wheels.</li> <li>• Narrow lanes with the arrival of the tramway</li> <li>• Arrangements made in the absence of unanimous technical references (intersections not having the same geometrical and technical characteristics within the same city).</li> <li>• Poor allocation of space, which generates mixed traffic (pedestrians, users of both wheels and vehicles of very large masses).</li> <li>• Absence of hierarchy: the construction and operation of the axes are not in line with their function (main network, collector, serving, moderate)</li> <li>• Road infrastructures not adapted to the exercise of the TIR.</li> </ul>
	Bus station	<ul style="list-style-type: none"> <li>• Road stations are characterized by different management methods as well as a lack of coordination between the various actors (Impact on use of platforms, respect of schedules, problems of safety and cleanliness, etc.)</li> <li>• Increased deficits in legislation, governance and management, their implementation, and their distribution and renovation</li> <li>• Absence of equipment available to drivers of large taxis and often simple vacant lots serve as stations.</li> </ul>
	Traffic	<ul style="list-style-type: none"> <li>• Rigidity of existing means of transport</li> <li>• Unclear or inappropriate use of taxiways, detrimental to fluidity and road safety.</li> <li>• The often summary, inadequate or archaic exploitation of intersections (especially traffic lights) which contribute strongly to congestion phenomena</li> <li>• Difficulty of ensuring adequate maintenance of the spaces and equipment of roads (cleaning, repairs), from where templates sometimes badly exploited.</li> <li>• Priority concern of the driver to make the day profitable which makes the journey timed and consequently increased risks during traffic</li> <li>• Public transit generates traffic jams during stops especially at peak times.</li> <li>• Transit traffic is not deviated from the hyper center.</li> <li>• Shoreline activities (illegal parking, deliveries, extension of businesses, etc.), which greatly diminish their flowing capacity.</li> </ul>
	Parking	<ul style="list-style-type: none"> <li>• Poor operation of the road network and lack of parking policy (inadequate and very poorly placed parking areas)</li> <li>• Scarcity and parking congestion, surface or underground</li> <li>• Lack of coordination between the public parking policy on road and parking facility or parking areas.</li> <li>• Absence of regulation of private parking leads to a lack of places on private domain which leads to a monopolization of parking on roads</li> <li>• Absence of organization of taxi parking in town</li> <li>• Bus stop areas unclear or inappropriate.</li> <li>• Despite the implementation of a ministerial decree dating back to 2004 that sets the guardian's performance, the latter are not at all constrained in setting their own tariffs</li> </ul>
	Environment	<ul style="list-style-type: none"> <li>• Noise pollution: Traffic is a major source of noise, particularly in urban areas</li> <li>• Water pollution: Road transport impacts both directly and indirectly on water quality. Both road accidents and vehicle exhaust are sources of oil spills and hazardous chemicals.</li> <li>• Land use and fragmentation of the habitat, disturbance of the natural environment and its division into smaller areas.</li> <li>• Absence of the concept of quantification in terms of the cost of GES emissions due to transport.</li> <li>• Total absence of emission control</li> <li>• Rarity of the use of acids in addition to diesel fuel to promote complete combustion of the fuel, thereby reducing gaseous emissions harmful to the environment</li> </ul>

Materiel	Messaging	<ul style="list-style-type: none"> <li>• Unfair competition on the part of the informal sector.</li> <li>• Difficulties inherent in the increase of the factors of production (SMIG, Insurance, fuel ...)</li> </ul>
	Voyageurs	<ul style="list-style-type: none"> <li>• Oversized demand in relation to supply.</li> <li>• Abnormal waiting times for transfer of persons.</li> <li>• No information on the route and schedules.</li> <li>• Failure to comply with departure schedules and speeding are major problems for buses</li> <li>• Scuffle, known bus stops, as well as overload, and especially the lamentable mechanical state of several buses put into service</li> </ul>
	Goods	<ul style="list-style-type: none"> <li>• Offer oversized in relation to demand.</li> <li>• Atomicity of the sector and dominance of large shippers who take advantage of this degradation of prices.</li> <li>• Quasi absence of companies specializing in the transport of hazardous materials and the development and equipment of unsuitable vehicles.</li> <li>• Lack of security measures for goods that avoid obstacles to the smooth operation of their operations in the TIR.</li> <li>• Difficulties in Moroccan TIR activity for the capture of return shipments,</li> <li>• Absence of the ADR card, which is compulsory for transporting hazardous materials on European soil by professional drivers</li> <li>• Lack of professional competence criterion for access to the profession.</li> <li>• Inadequacies in refrigeration infrastructures, specialized handling and safety (slowness in operations and damage to products)</li> <li>• Low price / quality ratio.</li> <li>• Unfair competition from informal transport</li> </ul>
	Energy	<ul style="list-style-type: none"> <li>• High energy consumption by the transport sector (about a quarter (25.2%) of total final energy consumption in 2007), while road transport accounts for more than 80% of consumption by all transport network</li> <li>• Weakness in final energy intensity (final energy consumption / GDP)</li> </ul>
Manpower	Driver	<ul style="list-style-type: none"> <li>• Absence of qualified and specialized professions in transport</li> <li>• Violence and aggression, lack of reporting and training systems</li> <li>• Problems related to working time and rotating schedules and absence of affiliation to social security institutions.</li> <li>• Degradation of working and living conditions for taxi drivers dominated by holders of licenses and intermediaries (high daily working hours combined with insufficient sleep duration)</li> <li>• Intervention by the public prosecutor at the Court of First Instance, which is described as illegal, in the relationship between the tenants and the lessors of the transport licenses</li> <li>• Checkpoints in the city are known to road users who adapt their behavior accordingly.</li> <li>• User of both wheels drives indifferently on the right and left lanes.</li> <li>• Failure to respect permitted road speeds for more profits</li> <li>• Non-compliance with traffic rules</li> </ul>
	Inspection Agents	<ul style="list-style-type: none"> <li>• Absence of integrated communication actions, which involves more control bodies accompanied by pre- and post-evaluation studies.</li> <li>• Absence of an authority for piloting road checks</li> <li>• Failure of the driver control and sanctioning system</li> <li>• Lack of terminals to be built on the number of points available to the driver.</li> <li>• Bargaining between inspection agents and irresponsible drivers.</li> <li>• Use of illegal radars, control on roads without pre-signaling or in places prohibited on the highway, withdrawal of license without receipt.</li> <li>• Lack of specific training for examiners (driving license) and need for regular inspections with severe penalties for breaches of the basic rules.</li> <li>• Rare use of breathalyzers (ethyl test and ethyl meters) to assess the inebriated state of a driver.</li> </ul>

	Pedestrian	<ul style="list-style-type: none"> <li>• Irresponsibility of pedestrians who show negligence in the rules of the road, there is no order in pedestrian use: crossing, respect of traffic standards, walking in the middle of roads.</li> <li>• Absence of the respect of the crossing checked by the motorists</li> </ul>
Management	Public	<ul style="list-style-type: none"> <li>• Treatment and verbalization of traffic violations continue to be done manually.</li> <li>• The current legislation has failed to mention the wearing of helmets for bicycle users and engines in the speed does not exceed 45 km / h</li> <li>• The use of hands-free kit is tolerated by the legislator, which does not reduce the negative impact of the telephone on road safety.</li> <li>• Lack of legal basis for automated control, in particular through fixed radar stations and weighing stations (checking the technical overload of vehicles).</li> <li>• Lack of a legal basis for the control of alcohol driving by appropriate means.</li> <li>• Lack of supervision of the emission of gases emitted by trucks by the Moroccan regulations.</li> <li>• Only the contract relating to the regulation and upgrading of actors in the road transport of goods that is in progress while the nine others are still not elaborated.</li> <li>• Economy of rent and strong atomization of the road sector created by the system of approvals initially established to regulate the sector</li> <li>• Generalization of practices not clearly foreseen by the law, such as leasing, assignment, and tacit renewal of time-limited agreement.</li> <li>• Organized actions concerning road safety are punctual in time and located in space and are not structural.</li> <li>• No commitment on specific numbers regarding the reduction of mortality by the designers of PSIU-II reflects either the uncertainty of the effect of the actions undertaken, or the unsecured involvement of the partners involved.</li> <li>• Implementation of the National Control Plan (PNC) is very limited. The control maps and control themes fixed by the PNC are not respected.</li> <li>• The difficulty of a geo-localized feedback concerning the activity of the control makes the follow-up of the PNC relatively difficult</li> <li>• Direct access to the accident database, the road database and the traffic database for organizations other than the DR and NIRB</li> <li>• Frequent use for the qualitative variables of the "other" and "unspecified" modalities indicates that the quality of data in the accident database needs to be improved.</li> <li>• Equipment acquired since 2004 offer several functionalities not valued by the Control Corps</li> <li>• Lack of strict control (with periodic inspections) of driving school driving conditions and the need to regularize access to the profession (driving school exercises).</li> <li>• Predominance of emphasis on infrastructure rather than management and operation in dealing with problems.</li> <li>• Absence of urban travel plans and integrated traffic plans (passenger cars, parking, pedestrians, etc.)</li> <li>• Absence of a global and multi-modal vision of urban travel that would address the problems as a whole rather than on an ad hoc basis.</li> </ul>
	Privet	<ul style="list-style-type: none"> <li>• Low development of logistics providers (lack of awareness of their importance).</li> <li>• Companies' structures not adapted to the logistics logic.</li> <li>• Recourse to the outsourcing of maintenance without contract remains a privileged practice by companies.</li> <li>• Lack of commitment to economic training.</li> <li>• Absence of road accident prevention plan.</li> <li>• Insufficient managerial skills, resulting in weaknesses in the use of Pilotage Dashboards and day-to-day management of transport operations.</li> <li>• Failure to calculate CO2 emissions from the fleet of vehicles.</li> </ul>
	Public/	<ul style="list-style-type: none"> <li>• Need to clarify the concepts that constitute all PPPs and which remain relatively different (ranging from the realization and management of infrastructures and equipment to the contracts for the delegated management of public services).</li> <li>• Need to specify at the PPP level the type of partner required (a financial partner or who operates the</li> </ul>

Measurement		<p>service) and to determine the method of remuneration.</p> <ul style="list-style-type: none"> <li>• Problems in the application of contracts, in particular those of delegated management related to the costs of investments in basic infrastructure (roads, water, electricity, sanitation and street lighting) and their exploitation which are not covered by the financial resources provided by the developers and the inhabitants.</li> <li>• Very long delays in payment of the sums due to operators by the delegating authorities.</li> <li>• Lack of human resources adapted to the regulation of the contract or outright in a situation of political blockade within the public partners.</li> </ul>
	Taxes	<ul style="list-style-type: none"> <li>• At least 13 taxes levied on the passenger transport sector.</li> <li>• Taxes on the purchase of new vehicles are cumbersome.</li> <li>• Taxi operators are tax-free, being inherently true informal enterprises.</li> </ul>
	Price	<ul style="list-style-type: none"> <li>• No revision has been applied since the fixing of passenger transport fares by bus by the decree of 2 December 1996, despite the increase in operating costs (fuel, SMIG, RDP, distribution costs, etc.)</li> <li>• Tariff escalation in goods transport despite publication of referral costs due to informal transport</li> <li>• Complex and random tariff system because of a wide range of taxes, which does not allow for an "average price" for road transport of one tone / km.</li> <li>• Decrease in tariff protection given the entry into force of the various texts signed with the European Union and the United States, which could have important consequences on the Moroccan economic fabric</li> <li>• Additional costs, in particular for international transport, due to security problems, in particular at ports (with no secure parking in waiting areas);</li> <li>• Additional costs, in particular for international transport, due to security problems, in particular at ports (with no secure parking in waiting areas);</li> </ul>
funding	<ul style="list-style-type: none"> <li>• Weak funding mechanisms</li> <li>• Very limited local government resources</li> <li>• No tariff compensation</li> <li>• Financed by the sector in terms of investment and operation</li> <li>• Difficulties in accessing finance and land for industrial operations</li> </ul>	

## Annex 2

		<i>Denomination</i>
<i>Federations and professional</i>		National Confederation of Road Transport in Morocco
		National Federation of Travelers Road Transport
		National Federation of Road Transport employers in Morocco
		Moroccan Federation of the Union of Public Road transport
		Moroccan Association of International Road Transport for Passenger
		Moroccan Association of Passenger Transport
		Moroccan Association of Road Transport of Messageries
		Association of Owners of Technical Visiting Centers
		Moroccan Association of Road Transport Training
		Association of Auto - School Owners.
		Moroccan Transport Association of Hydrocarbons and Liquids
		Moroccan Logistics Association
		Moroccan Association for mail carriers
	<i>Public institutions</i>	
		Ministry of Energy, Mines, Water and Environment
		Highways of Morocco
		Directorate of Statistics High Commission for the Plan of Morocco
		National Committee for the Prevention of Road Accidents
		Directorate of Roads and Road Traffic
		Road Transport and Road Transport Safety Directorate
		National Center for Road Studies and Research.

	Training Institute for Gears and Road Maintenance
	Public testing and studies laboratory
	General direction of the national security
	Department of Studies, Planning and Coordination

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