

NATIONAL LAND TRANSPORT STRATEGY OPTIONS FOR LEBANON

Summary Report

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Green Line

GREEN LINE's SUSTAINABLE TRANSPORT Campaign



Land transport is becoming a major source of negative environmental and social changes in Lebanon and is compromising the sustainability of the development process of the country. For these reasons, it is becoming increasingly crucial to have a complete national land transport management plan for the country.

Based on this rationale, Green Line decided to launch the SUSTAINABLE TRANSPORT campaign to advocate for the development of a **national** land transport management plan.

The major goal of the SUSTAINABLE TRANSPORT campaign is to reduce car circulation and promote green modes of transport by lobbying for the elaboration and the implementation of a National Land Transport Management Plan. Throughout the campaign, Green Line will assume an active role in the tasks assigned to the NGO sector in the management plan. This role includes:

- a) Raising awareness and changing faulty public attitudes towards cars and green modes of transport
- b) Providing technical support and assistance on land transport management strategies
- c) Assisting the public sector during the various stages of the elaboration and implementation of the land transport management plan.

Green Line believes that the Land Transport Management Plan should be based on innovative strategies for more efficient and equitable transportation. These strategies should be technically feasible and cost-effective, in order to insure the sustainability of the whole process.

Executive Summary

Objective of report

Across the entire globe, motor vehicle usage has increased massively. Growth in the world's transport activities has brought major benefits to many, but it also brought about major drawbacks. Transport is associated with a wide range of pollution problems, accidents, noise, urban congestion, and other socio-economic problems.

No single policy model alone can effectively tackle the socio-economic and environmental impacts of land transport worldwide. Each country may develop specific transport policies tailored to the characteristics of that country. The present study aims at proposing a land transport strategy plan for Lebanon, based on the concept of Transport Demand Management (TDM), which encourages green modes of transport instead of light-duty vehicle use.

This report reflects Green Line's vision of land transport management in Lebanon, and represents the basis for its "Sustainable Transport" campaign.

Impacts of land transport

The transportation sector generates significant amounts of numerous greenhouse gases (GHG) and other gaseous pollutants, thus contributing to the deterioration of local air quality, an increase of the climate change potential, in addition to acid rain and urban smog. Some of these emissions are potentially carcinogenic under chronic exposures, and affect several vital functions of the body in general and of the respiratory tract in particular.

On the other hand, automobile dependency increases consumers' transportation costs and resource consumption, requires significant financial and land resources for roads and parking facilities, and increases traffic congestion, roadway risk and environmental impacts. Death and injuries from traffic accidents generate enormous medical costs, as do respiratory diseases due to pollution.

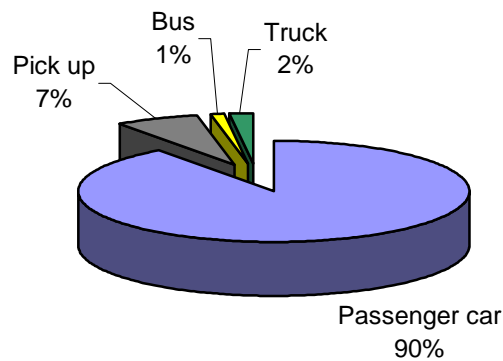
Land transport situation in Lebanon

Currently there is no complete national land transport strategy in Lebanon. The car ownership rate in the country is one of the highest in the world, estimated at a ratio of around 1 car for every 3 persons. The transportation sector in Lebanon is composed of a fleet of mainly old and poorly maintained vehicles. Passenger trips occur on a relatively inferior road network, with a weak public transportation system, and without regulation enforcement. In summary, the main problems of land transport in Lebanon are the over-dependency on private cars, the lack of organization, and the deterioration of the level of services provided.

AVERAGE VEHICLE AGE FOR LEBANON

Vehicle Type	Average age (years)
Passenger vehicles	14
Pickups	14
Buses	18
Goods vehicles	16

Source: Dar Al Handasah, 1995



DISTRIBUTION OF VEHICLES BY TYPE

Source: Dar Al Handasah, 1995

National Land Transport Strategy Options

There have been repeated efforts to solve the land transport problem in Lebanon, but none of them proposed a complete National Land Transport Strategy (NLTS).

The purpose of the NLTS is to develop long-term land transport policy options based on Transportation Demand Management. TDM is a common approach for solving transport problems based on using existing capacity (i.e., roads, public transport fleet) more efficiently. This strategy option can effectively decrease car circulation. The major TDM strategies that can reduce car circulation are:

- Promoting non-motorized modes of transport
- Improving the public transport sector
- Managing traffic flow
- Managing car parking
- Improving mechanical inspection
- Regulating fuel taxes
- Improving urban planning.

Other Non-TDM Strategies include:

- Improving land transport fleet condition, since old and poorly maintained cars are usually the most polluting
- Improving fuel quality, by importing less polluting fuels
- Introducing alternative fuel vehicles, such as electric and hydrogen cars
- Increasing road network capacity.

Feasibility of the suggested NLTS

In developing countries like Lebanon where resources are usually limited, strategies that use cost-effectiveness as a principal criterion are more appropriate than those that promote the best available technologies. Transportation Demand Management strategies are win-win solutions that

encourage efficient travel behavior and provide a combination of economic, social and environmental benefits.

The reduction of total energy used by the land transport sector, through shifting transportation demand from private car use to green modes of transport (e.g., walking, biking, and public transport), can lead to a feasible land transport management plan. This can be achieved either by facilitating and promoting the use of alternative means of transport, or by decreasing the existing excessive rights of light-duty vehicles. Such a strategy is not only the most effective method for reducing impacts from land transport, but also the most cost-efficient. Other complementary mitigation strategies, such as improving fuel and vehicle quality, are also essential components for the success of a NLTS.

Benefits of suggested NLTS

A strategy based on the reduction of car circulation and the encouragement of zero-to-low emission modes of transport potentially generates the following positive impacts:

- Permanent reduction of air pollution
- Congestion reduction
- Roadway cost savings
- Improved choice of transport
- Consumer savings on vehicle cost, operation and maintenance
- Safety benefits
- Efficient land use
- Economic development

Barriers facing the suggested NLTS

- The difficulty of changing the attitude towards car use
- Lack of proper enforcement
- Perceived accident risk of non-motorized modes of transport
- Cultural and institutional bias against green modes of transport
- Generated road space that can be an incentive for increased car use

Experiences in TDM strategies

NLTS based on TDM have succeeded in many developed countries, especially in Europe. This was achieved by extensive campaigns that were carried out over a period of many years by NGOs and government institutions.

TRANSPORTATION MODE SPLIT IN PERCENT OF TOTAL TRIPS

Urban Area	Car	Public Transit	Bicycle	Walk	Other
Austria	39	13	9	31	8
Canada	74	14	1	10	1
Denmark	42	14	20	21	3
Netherlands	44	8	27	19	2
Sweden	36	11	10	39	4
Switzerland	38	20	10	29	3
United Kingdom	62	14	8	12	4
U.S.	84	3	1	9	3

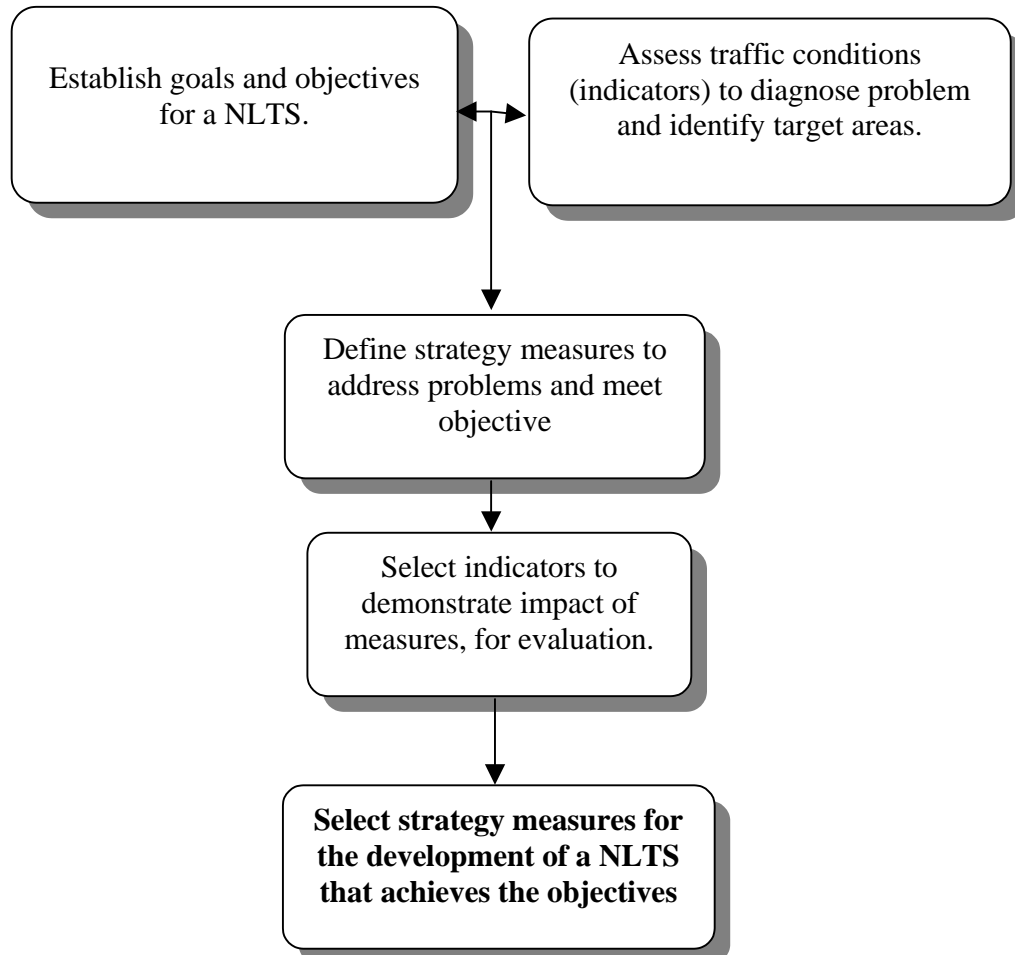
Source: Litman, 1999c

Guidelines for developing a NLTS

For developing a NLTS, the following general steps can be followed:

- Establish problem statement
- Scoping and background research
- Develop planning process
- Establish vision, goals, objectives, and evaluation criteria
- Identify constraints and opportunities
- Prioritize projects and programs
- Develop implementation plan and budget
- Program evaluation
- Update and modify plan as needed.

DEVELOPING THE NLTS



General steps for developing a NLTS

In order to develop a successful NLTS, the commitment and co-operation of various stakeholders is needed, especially the public. A complete overview of the existing land transport situation is needed, which requires the availability of the following information:

- Demographic information such as population count, age and gender distribution, residence location, employment status, and income distribution
- Origin and destination of trips
- Time, day of the week, day of the year, and conditions, such as weather, road conditions, and traffic conditions for trips
- Purpose of trip, and what factors affected travel
- Future potential travel demand
- Existing transport conditions and facilities
- Constraints and opportunities for improvement
- Vehicle ownership
- Urban transport pricing
- Public financing for urban transport
- Personal trip characteristics
- Traffic performance indicators
- Public transport operations.

Once the government has decided in principle to implement a defined land transport strategy, the first requirement is to put in place the necessary institutional arrangements. Action is therefore required on two levels:

- 1) Authorities must recognize what kind of technical organization is necessary to address urban transport issues; and
- 2) The organization must have adequate human and financial resources to perform the required functions.

Evaluation is required to inform decision-makers about strategy impact, throughout the strategy development process. To evaluate a transportation policy or program, it is important to determine its travel impacts; that is, the changes it has on personal mobility and vehicle traffic. The evaluation process should include an economical assessment as well. Finally, it is recommended that the Ministry of Transport and Public Work develop a complete NLTS, with the supervision of the Higher Council for Land Transport for its implementation.

