

CLIMATE CHANGE AND ENVIRONMENT IN THE ARAB WORLD PROGRAM

Sustainable Transport Series

Sustainable Transportation in the Arab World: International Benchmarking on Sustainable Transport Policies and their Impacts

Summary

The world's transport sector still suffers from unsustainable trends that lead to increased levels of greenhouse gas (GHG) emissions. There have been efforts, in the Arab world, the United States and Europe, as well as the rest of the world, to tackle the issue. Much work remains to reach a sustainable transport system in the Arab world, but the recommendations presented offer basic guidelines on how to proceed with any sustainable transportation initiative.

Recommendations

The implementation of sustainable transport policies can lead to better living standards for citizens, and could even lead to economic prosperity at the level of the entire nation. Therefore, it is important to learn from the experiences of the European and American governments and agencies in implementing sustainable transport policies to understand their success factors. There are several obstacles that would prevent the implementation of certain policies in the Arab world; therefore, the policies should be carefully crafted to serve the Arab nations.

The following table summarizes the recommendations on the implementations of different sustainable transport policies in the Arab world, based on the policies undertaken in the United States and Europe. The recommendations are divided into short, medium and long term strategy.

The Climate Change and Environment in the Arab World Program aims to understand the climate change and environment policy process in the region and define the most appropriate policy recommendations by linking development in applied sciences on issues related to climate change and environment to social sciences.

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Table 1: Recommendations for Sustainable Transport Policies in the Arab World

	US/Europe Intervention	Success Factors	Arab World Intervention	Challenges/Impediments	Recommendation
Vehicle/Fuel Technology	Fuel Standards	<ul style="list-style-type: none"> Stringent standards Strict monitoring and penalties 	Fuel Standards	<ul style="list-style-type: none"> Failure to apply standards 	Long term strategy: Imposing strict policies to implement fuel standards for vehicle fleets
	Fuel Efficiency	<ul style="list-style-type: none"> Gas Guzzler Tax Fuel Tax 	Fuel Efficiency	<ul style="list-style-type: none"> Lack of regulations and policies 	Medium term strategy: Impose fuel efficiency standards on importers of vehicles in phases
	Electric and alternative fuel vehicles	<ul style="list-style-type: none"> Charging stations Financial Incentives 	Electric and alternative fuel vehicles	<ul style="list-style-type: none"> Lack of incentives for widespread use of modern technology Lack of infrastructure to support modern technologies 	Long term strategy: Provide financial incentives and adequate charging stations for EVs and alternative fuel vehicles
	Speed Control	<ul style="list-style-type: none"> Public acceptance and consultation Implementation and operation Effective enforcement 			Short term strategy: Impose strict speed limits with proper monitoring and enforcement through the use of cameras that capture the license plate numbers of non-compliant drivers
Road/Vehicle Operations Improvements	Traffic Signal Timing	<ul style="list-style-type: none"> Accurate traffic volume use 			Short term strategy: Reassess traffic volumes after certain periods of time to ensure accurate signal timing optimization
	HOV Lanes	<ul style="list-style-type: none"> Awareness on the availability and eligibility of use of HOV lanes Fuel tax to prevent induced traffic 			Long term strategy: Provision of HOV lanes with awareness on their availability and fuel tax policies to discourage induced traffic
	Public Transit	<ul style="list-style-type: none"> Exclusive right-of-way transit systems Smart cards Affordable tickets Reliable scheduling 	Public Transit	<ul style="list-style-type: none"> Inaccurate demand projection Unreliable public transit Lack of policies and incentives to encourage shift from private vehicles 	<ul style="list-style-type: none"> Short term strategy: Accurate scheduling, affordable tickets, and smart cards Long term strategy: Provision of public transit system
	Fuel Tax	<ul style="list-style-type: none"> High fuel tax Alternative, cheaper modes of transport Incentives to switch to alternative fuel vehicles 	Fuel Tax	<ul style="list-style-type: none"> Unreliable public transport No fuel tax in some Arab countries 	Short term strategy: Impose a high fuel tax and offer incentives to switch to "cleaner" modes of transport
Demand Management	Pricing Incentives/Disincentives	<ul style="list-style-type: none"> Public acceptance and consultation Strong leadership and political engagement Research and monitoring Awareness raising 	Pricing Incentives	<ul style="list-style-type: none"> Limited funding 	Medium term strategy: Public acceptance and consultation, provision of financial incentives, strong leadership and political engagement, and awareness raising
	Land Use	<ul style="list-style-type: none"> Transit-oriented development Retail growth on major corridors Acquisition of nearby land Provide limited parking spaces 	Inspection and Import regulations	<ul style="list-style-type: none"> No emission inspection Failure to implement regulations Lack of emission standards Failure to implement emission control strategies 	<ul style="list-style-type: none"> Short term strategy: Impose import regulations and impose emissions standards Medium term strategy: Apply emission control strategies
	Ridesharing	<ul style="list-style-type: none"> Effective land use planning Road tolls High parking fees 			Long term strategy: Plan in order to provide transit-oriented development. Implement policies that require retail growth on major corridors and that limit parking spaces

Problem Statement and Key Messages

The transport sector is globally responsible for 90% of urban air pollution, the death of nearly 800,000 people and the emission of 14% of the world's greenhouse gases (GHG) each year (World Bank, 2011). Transportation worldwide emitted 23% of the world's total CO₂ emissions in 2008, and land transport contributed to the largest share with 16.5%. Under current "business as usual" scenarios, emissions are expected to rise further in absolute terms, highlighting the criticality of addressing unsustainable forms of transport. Unsustainable transportation practices have been inflicting substantial damage to the earth and its inhabitants for years. Despite current efforts that aim at shifting to more sustainable methods of transport, more should be done. It is therefore crucial that governments take a strong stance against unsustainable behavior that will cause further damage (WHO, 2009).

The Arab world has been suffering from rapid sprawling in some major cities, an aging vehicle fleet, poor car maintenance, poor urban planning and a lack of efficient and adequate public transport systems. These trends and practices have contributed to unsustainable forms of transportation, and despite efforts that have been made at establishing policies and measures that aim at providing sustainable transport systems, a considerable change is still needed.

Several different sustainable transportation policies in the United States and in Europe have been suggested by governments, and have enjoyed some success in achieving better overall standards of living for their people with reduced impact on the environment. Fuel consumption by vehicles can be reduced in several ways; by reducing the distance traveled by vehicles, by reducing the duration of the trips, especially in high-traffic urbanized regions, or by improving the fuel economy of vehicles. Moreover, there are several strategies involved in providing sustainable transport and they mainly fall into one of the following categories: vehicle/fuel technology changes, road/vehicle operations improvements, and demand management. Countries have focused on some categories more than others with Europe, for example, favoring higher fuel taxes on gasoline, and the US persisting on increasing vehicle fuel efficiency.

Sustainable Transportation in the Arab World

The transport sector in the Arab world contributes to around 23% of total CO₂ emissions. In order to mitigate the increased GHG emissions in the Arab region a series of measures and changes in transport policies that aim at limiting the transport sector's CO₂ emissions must be pursued. Policies must be structured and implemented at the level of each country, rather than the regional level, due to the difference in financial capabilities between the Arab countries.

There have been implementations of sustainable transport policies in the Arab world; however, such implementations have been limited. The few policies that have been put in place by some Arab governments include: fuel standards, alternative fuels, public transit, pricing incentives, and inspection and import regulations.

Some of the above policies have witnessed some success, most notably public transit efforts in the United Arab Emirates; however, impediments to the success of sustainable transport policies have made their implementation limited. Some of the challenges faced by Arab nations include:

- A lack of awareness on sustainable transport policies and their effectiveness
- A lack of funding for transport-related projects
- A lack of data to develop effective policies
- A lack of technical expertise that would support new, sustainable transport technologies.

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The Issam Fares Institute for Public Policy and International Affairs (IFI) at the American University of Beirut (AUB)

was inaugurated in 2006 to harness the policy-related research of AUB's internationally respected faculty and other scholars, in order to contribute positively to Arab policy-making and international relations. IFI is a neutral, dynamic, civil, and open space that brings together people representing all viewpoints in society. It aims to: raise the quality of public policy-related debate and decision-making in the Arab World and abroad; enhance the Arab World's input into international affairs; and, enrich the quality of interaction among scholars, officials and civil society actors in the Middle East and abroad.

Sustainable Transport Policies in the United States and Europe

The sustainable policies considered by governments in Europe and the United States show that there is concern among policy-makers, more so than those in the Arab world. The movement towards a more sustainable transportation system is taking shape, with certain policies being implemented and others yet to take effect. There have been implementations of some sustainable transportation policies in the United States and Europe, and some of those policies have been successful; in 2011 it was measured that emissions from the European Union nations decreased by 14.9% relative to 1990 levels. Despite such success, efforts are still ongoing in order to further promote sustainable transportation, and further decrease GHG emissions from the transport sector.

Speed control is one of the possible road/vehicle operations improvement strategies, and has been successfully implemented in the city of Rotterdam, where a 15% decrease in CO₂ emissions was realized. The key to the success of the Rotterdam speed limit reduction initiative was the public's acceptance of the benefits of the reduction and effective enforcement that included the strict penalization of non-compliant drivers through the use of cameras.

Demand management policies are the most implemented in attempts to reduce GHG emissions. One of the most common implementations is the provision of public transit. Successful public transit implementations include the provision of smart cards, affordable tickets, reliable scheduling and exclusive right-of-way. Another policy that falls under the demand management category is fuel tax. Taxing fuel increases its price, and, thus, increases the price of private vehicle usage, which would encourage commuters to shift to other, cheaper forms of transport. Therefore, the provision of alternative modes of transport, such as public transit, is necessary to public acceptance, and the ultimate success, of fuel taxation.

Ridesharing initiatives have been implemented over short periods and at small scales in some areas in Europe and the United States, and have witnessed some success. Their success depends on several factors that include effective land use planning, that would ensure that the distance travelled to pick up extra passengers would not offset any potential benefits of sharing a vehicle. In addition, ridesharing should be made more attractive through increasing the cost of private vehicle usage by increasing fuel taxes, parking fees, and toll fees. Enforcing pricing disincentives would increase the cost of private vehicle usage and would therefore encourage a decrease in their usage. This has been witnessed in London, where a charging zone was created in 2003, and has seen a 26% decrease in congestion compared to when entering the zone was previously free. The success of the London congestion pricing initiative was due to many factors that included public acceptance, successful implementation and effective enforcement, research and monitoring, and awareness-raising.



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