



Articles

Urban Mobility ^{and} Sustainable Development

in the Southern and Eastern Mediterranean

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Abstract

In a context of rapid urbanisation in the Southern and Eastern Mediterranean Countries (SEMCs), urban mobility is a crucial issue in terms of sustainable development. Following the recommendations of the Mediterranean Strategy for Sustainable Development adopted in 2005 by the 21 riparian States and the European Community as Contracting Parties to the Barcelona Convention, Plan Bleu (one of the regional activity centres of the UNEP/MAP) addressed the issue of sustainable urban mobility by carrying out six case studies in SEMCs' agglomerations: Aleppo (Syria), Algiers (Algeria), Cairo (Egypt), Istanbul (Turkey), Tangiers (Morocco), and Tunis (Tunisia). This essay summarises outcomes and recommendations of the case studies.

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Introduction

In the Southern and Eastern Mediterranean Countries (SEMCs), the urban growth is still strong, accompanied by the urban sprawl phenomenon, with an extension of illegal human settlements and residential areas as well as the destruction of agricultural and natural areas in the fringes of biggest agglomerations. The urban population of the Mediterranean could reach up to 75% by 2030 (Plan Bleu, 2005). The patterns of spatial growth in the SEMCs' cities, as well as the organisation of urban mobility system, will determinate what will be their energy consumption and greenhouse gas emissions (GES). These emissions would increase sharply if the cities tend towards the sprawling city model, with travels over long distances and private car dependency – instead of dense city model, structured by a land-use planning and a transport supply offering mass transportation services.

Although the levels of households' motorisation are lower in the SEMCs than in the Northern shore of the Mediterranean and in the European countries, there was a significant increase in the two last decades, with a potential of growth even more important that public authorities and transport companies do not succeed in improving collective transport services. The number of cars on the road is growing faster than the population: in Tangiers (Morocco) and Tunis (Tunisia) for instance, the annual rate of car ownership is growing about 4.5%, while annual rates of population growth is stabilising (around 2% and even less). This process of "democratization to the access to private car" can be explained by several reasons: improving levels of income for middle classes, increasing of car loans and vehicle imports, and installing of foreign automakers.

Subways in Cairo (Egypt), Istanbul (Turkey) and Algiers (Algeria), bus rapid transit (BRT) in Istanbul,

new tram projects in Algerian, Moroccan and Tunisian cities, are the results of policies aimed at developing public transport and mass transit system. Such examples show the awareness of public authorities regarding sustainable urban mobility issues, but integrated approaches between urban planning and transport organisation are still few.

Sustainable urban mobility is addressed by Plan Bleu, one of the Regional Activities Centre of the Mediterranean Action Plan under the auspices of the United Nations Environmental Programme (UNEP/MAP, Barcelona Convention), by tackling jointly two essential components of sustainable urban development, both urban planning and transport organisation, towards an integrated vision between those crucial components.

In the framework of the "Urban Mobility and Sustainable Development" programme (2008-2010), Plan Bleu carried out case studies in six agglomerations of the SEMCs: Aleppo (Syria), Algiers (Algeria), Cairo (Egypt), Istanbul (Turkey), Tangiers (Morocco), and Tunis (Tunisia). Following a decision support approach, those case studies aimed at highlighting the environmental impacts of urban sprawl and motorised travels over increasing distances. This essay summarises outcomes and recommendations of the case studies into three parts, as follows:

- The issue of 'integrated urban transport systems', raising questions about complementary between several patterns of transportation;
- The issue of inclusion of illegal human settlements and of transport small scale operators;
- The issue of 'cross-governance' between urban planning and transport system, raising questions about temporal and spatial scales of territorial planning, particularly in the framework of 'new cities' and with regard to their compliance with the principles of sustainable urban development.



The central issue of 'integrated urban transport systems': What about complementarity between various patterns of transportation?

Public and private land and property development in the suburb areas, feeding urban sprawl in several forms (residential areas, social housing areas, illegal human settlements, etc.), result in longer daily travels between home and work over longer distances and travel times, impacting the urban environment and the human well-being in general. With the increase of individual motorised daily travels between home and work, between downtowns and suburb areas, between housing zones and business areas, there is an urgent need to develop and strengthen mass transit system (BRT, tramways, subways) in a multimodal and balanced urban transport system. The later should include small scale operators, as we will see in the second part of this text, thanks to rules of complementarity defined together by public authorities and all the operators under the coordination of a 'transport control authority'.

Representing about one fifth of the total of motorised travels in Cairo, with less than 4% of the energy consumed by the transport sector in the Egyptian capital, the subway can be considered as a success. Mass transport in its own sites (lines) can be planned and implemented only in the medium term. Indeed the decision-making process need time to remove land constraints, as well as to provide the technical and financial resources requested. For instance, the subway of Algiers launched in the 1980s is operational since 2011 – after a serious economic, social, and political crisis. BRT and tramways represent also urban planning operations and urban renewal schemes for reclassifying public areas, especially in downtowns (business district centres). As anticipation, it is necessary to book today available land for large infrastructure and facilities of the future, multimodal platforms (hubs) and park-and-ride facilities representing a large part of land-use.

However, public investments for mass transit system are probably not the only response to solve problems of urban mobility. Mass transportation could not be effective without a concerted reflection and a stakeholder dialogue to define integrated urban and transport planning schemes and strategies. Complementarity between different patterns of transportation being a key-factor of integrated transport systems, it is recommended to focus on a holistic and multimodal model, articulating various patterns of transportation, developing mass transit system, providing park-and-ride hubs close to the main terminals and exchange platforms, including small scale operators and taking advantages of their strengths. For instance, small scale operators could play a key role for distributing flows from and to the points of origin and destination of mass transit networks.

Finally, if it appears strongly necessary to promote mass transit system and public transport corridors because they are more environmental friendly, it is also recommended –due to socio-economic factors– to support those changes by integrating existing urban transport patterns, including transport small scale operators, while controlling the use of private cars. Towards a less car-dependant urban model, improving the energy efficiency of the transport sector induces the renewal of vehicles used by small scale operators, particularly collective taxis, as well as the definition of rules of complementarity with mass transportation.

Inclusion of illegal human settlements and of transport small scale operators

Schematically, illegal human settlements in developing cities is a response to the gap (mismatch) between supply and demand of legal housing units, while "artisanal transport" and small scale operators represent adaptations to the public and mass transport deficiencies (Godard, 2008, 2005; Le Tellier, 2005). Micro-scale operators are particularly useful in neighbourhoods and suburbs presenting difficulties of accessibility.



In the SEMCs cities, illegal human settlements represent about a third of the total housing (up to 60% in Istanbul). In Aleppo for instance, illegal housing covers 3,500 hectares and represents almost 40% of the population (900,000 inhabitants). Those urban areas are built in an illegal manner, but they generally arise with the support of local authorities. They are considered as a regulator of the housing market in urban contexts where the formal supply is insufficient and inadequate in comparison with the demand of low-income households.

While substandard and illegal housing were seen as a crucial worrying by public authorities during the 1990s, illegal human settlements seem now geographically contained and gradually integrated thanks to inclusive policies: restructuration by providing access to public utilities (roads, water and sanitation, electricity, schools, etc.), and 'regularisation' in situ.

Illegal human settlements are generally built in urban fringes, particularly in landlocked areas with high slopes. However, those suburban areas have quite high densities: that is a point of compliance with the urban models recommended by international organisations. Furthermore, irregular neighbourhoods gather spaces of sociability, with small shops close to houses, while such local facilities seem rather lacking in social housing and rehousing areas. Social housing areas gather large vertical buildings (standardised collective habitat), socially homogeneous and geographically far from downtown. Social housing projects preferring 'integration in situ' of irregular neighbourhoods present more success than rehousing projects with relocation. Indeed the transfer of people from one place to another one leads to the risk of exclusion and the loss of incomes, especially when the new housing areas are landlocked from central and employment areas (Le Tellier and Iraki, 2009).

According to Godard (2005), due to the difficulties of bus companies in the 1990s, the institutional trans-

port (both public and private) has fallen into a "double trap":

- Increase of car ownership and increase of individual motorised daily travels. For instance, there are more than 1.7 million of private cars in Istanbul (27% of the total at the national level), or 137 private cars per 1,000 inhabitants in 2007, explaining most of the urban traffic jumps.
- Development of transport small scale operators (minibus, collective taxis), as an alternative to the lack of public transport. Those micro-operators are more adapted to the constraints of accessibility in the urban fringes.

This "double trap" results in several problems:

- Traffic congestion. The well-known picture of '1,000 private cars = 50 minibuses = 1 subway' is particularly significant of the need for modal shift to mass transit networks in dedicated lanes, especially in megacities such as Cairo and Istanbul.
- Air pollution. Transport small scale operators use old and pollutant cars that contribute significantly to air pollution.
- Competitive situations instead of complementarity between the different patterns of urban transport. The competitive situations represent a constraint for the mass transit system option, generally less flexible and slower than micro-scale operators.

Provider of employment in developing cities where the unemployment rate is particularly important, transport small scale operators have a crucial socio-economic role. For instance, there are about 3,000 taxis in Tangiers (at least the double for taxi drivers) but only hundred bus drivers, or 1 bus per 10,000 inhabitants against 1 taxi per 350 inhabitants. Small scale operators represent a sensitive issue due to economic and social issues and challenges they represent. In Morocco for instance, the management of taxi licenses represents a convergence of interests: incomes and rents to licences' owners whose



benefit of privileges from the State, creation of direct and indirect employments, taxes for local authorities, and useful services of transport, especially in urban fringes. In Morocco transport small scale operators (mainly individual and collective taxis) raise local and national policy issues: when demonstrations of taxi drivers paralyze the national economy and the economic capital, Casablanca, how to make them accept a secondary role close to mass transit systems?

Due to competition (more than complementarity) between several patterns of urban transport, trade-offs and balanced compromises have to be defined by a 'transport control local authority' in collaboration with all the operators and stakeholders having an interest or being affected by urban mobility issues; such transport control authorities are still lacking in all the agglomerations studied. The coexistence of several urban transport patterns raise the issue of their articulation and complementarity: it is necessary to define new equilibrium, revisiting the strengths and weaknesses of each pattern of transportation, including small scale operators which could have a complementary role with mass transit system, particularly in 'ends of lanes' with lower demand (unprofitable for mass transport).

However, transport small scale operators are responsible for damages to the urban environment: pollution from old cars, running on diesel and strongly emitting fine particles and suspended solids. It is necessary to contain the increase in the number of small scale operators since the 'taxi option as a palliative to the lack of mass transportation' would result in the proliferation of micro-operators and as many cars contributing to traffic jumps and air pollution. The benefits of transport small scale sector and its integration into transport systems of the future is conditioned by incentives for the renewal of the fleet and to encourage investment in new and less pollutant cars. Lessons learned and good practices are reported from experiences in Cairo: renewal of the fleet of taxis, creation of taxi companies with the support of the Ministry of Finance. In Tunisia, the fleet of "louages"

(suburban and rural collective transport) was replaced and the depots were modernized thanks to public incentives.

Urban governance, scales of territorial planning, and creation of 'new cities'

Among the barriers to the definition of integrated urban strategies aiming at controlling urbanisation and urban mobility, governance and functioning of the institutions represent a crucial issue, with several problems: difficulty to manage urban sprawl, lack of anticipation, lack of stakeholder consultation (stakeholder dialogue), vision sectorised/segmented between urban management and provision of public utilities, overlapping between organisations and/or jurisdictions, superposition of responsibilities between various organisations.

As the Northwest "dynamic corner" of Morocco and Africa, Tangiers - Tetouan region is rapidly changing in the framework of the 'Tangiers Mediterranean Zone' creation (Tangiers Med): new port, new economic clusters, 'new cities', new infrastructures (road, highway, and rail). Urban sprawl is spilling over administrative boundaries and tending to disconnect the administrative area organisation from its real functions. The metropolitan area emerging around the two regional capitals, Tangiers and Tetouan, represent a unique occasion to revisit territorial planning schemes, raising important topics in terms of sustainable urban mobility: flows within urban areas (between fringes of the agglomerations, economic clusters, and city centres), and flows at the Tangiers - Tetouan regional scale. The creation of Tangiers Med area induces the creation of employments for a workforce mainly located in Tangiers: workers in Tangiers Med need new transport services to connect housing areas (in Tangiers) and new employment areas (in Tangiers Med). Projects of 'new cities' are planned to complement the regional urban system, but pending the creation of those satellite centres it is needed to define a suitable transport supply at the regional level.



The creation of 'new cities' usually results in longer travel distances, without sufficient regard to the expected flows, which leads to more and more travels with private cars. In Cairo, face to very high densities phenomenon (contributing to the picture of a city crowded, congested, with a lot of traffic jumps and without a coherent overall organisation), public authorities decided to create 'new cities' and 'areas of de-densification': phenomenon of decentralisation / de-concentration of activities from central to suburban areas. In addition to the creation of industrial areas in new satellite centres, business areas and universities were relocated outside the ring road of Cairo. However, the relocation of space-consuming activities has not been sufficiently supported by a relocation of people to the new suburb areas.

In Algiers, the 'movement of residential loosening' in suburban areas results in a 'de-densification' of central areas, although the centre of the agglomeration remains the most densely urbanised and the most attractive area. This process of 'redeployment' (relocation) of the central districts' inhabitants to the suburbs is not supported by a relocation of activities and employments to those suburbs; Algiers still has a high concentration of jobs in the central areas. Thus, the phenomenon of residential urban sprawl Algiers knows during the last two decades resulted in the relocation of housing areas, switching the centre of gravity of the agglomeration from central and coastal areas to suburban districts. Due to this decoupling between residential neighbourhoods and employment areas, daily travels from downtown to suburb areas are increasing, with big problems in terms of traffic jump.

The policy of 'decentralisation / de-concentration' of business areas in Cairo is an opposite trend in comparison with the process of residential loosening in Algiers (relocation of housing but not of activity/employment areas since jobs remain concentrated in the administrative and service centres). However, the impact is similar: decoupling housing and em-

ployment areas, resulting in new flows and travels over long distances. Then, the increase of travels in private cars addresses deficiencies of the collective transport supply.

Conclusions

Behind the trends of urban sprawl and de-densification of central areas, with built areas growing fast, there is a phenomenon of 'residential loosening' (Algiers, Tangiers) and/or redeployment/relocation of activities (de-concentration / decentralisation in Cairo), resulting in decoupling between employment and housing areas, with a serious increase of daily travels over longer distances and with private cars. The response is probably in the definition of sustainable urban development strategies, reflecting at the 'human scale' to better connect housing and employment areas, and widely to build living areas including housing, activities and services, educational and health facilities, and leisure activities.

The case studies highlighted the lack of coordination and consistency between urban planning and transport system organisation. The agglomerations studied are now facing a double challenge: consolidating the recent achievements to solve deficits accumulated during previous decades (crisis of urban transport), while anticipating future changes to meet the needs of urban growth and urban sprawl, and to integrate the flow of people attracted by employment in biggest agglomeration of Southern Mediterranean countries. This refers to two linked issues, namely the upgrading and renewal of existing urban areas, while controlling planned and spontaneous urban extensions. These two issues require the definition of specific instruments to control and incorporate new developments. New challenges arise from urban sprawl and increasing of motorised travels, but the planning instruments are most often attached to incorporate new extensions, exacerbating the difficulties of equipment in infrastructure and public utilities.



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