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Plan Bleu Regional Activity Centre



Urban mobility and sustainable development in the Mediterranean

Regional diagnostic outlook



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Preamble

Featuring rapid urbanisation in the states on the Southern and Eastern shores and dominated by urban sprawl to the North, the issue of urban mobility in the Mediterranean raises major questions in terms of sustainable development.

The Blue Plan addressed these issues in the Urban Areas and Transport chapters of its environment and development outlook, published in 2005, before subsequently initiating more detailed monitoring of mobility trends in several conurbations (Sfax, Batna, Barcelona, Aix-Marseilles).

In 2005, the 21 states around the Mediterranean and the European Community, Parties to the Barcelona Convention, adopted the « Mediterranean Strategy on Sustainable Development » (MSSD), which was endorsed by the Barcelona Euro-Mediterranean Summit in November, 2005. Promoting sustainable urban development is one of the MSSD's seven priority action areas.

Within this context and under its 2007-2015 intervention framework as validated by the 21 riparian states, the Blue Plan has committed itself to paying particular attention to transport and urban mobility issues in the Mediterranean, particularly in view of their links with climate change. This will be achieved through a programme to run from 2007-2010 intended to further knowledge about travel. It is reflected in a working programme with three thrusts:

- The coordination of six case studies on the cities of Istanbul, Cairo, Tunis, Algiers, Tangier, and Aleppo. The studies were conducted with the support of the World Bank, the French Development Agency and Veolia, with local hand-over workshops being organised.

- The holding of a technical hand-over seminar in Sophia Antipolis on 23 and 24 November 2009, which provided the opportunity for the handover of all the work conducted (case studies, regional study, specific studies) and for regional level debate between experts, local practitioners and partners and stakeholders in the study programme.
- The drawing up of a regional diagnostic outlook on urban mobility in the Mediterranean. Drawing on the six case studies and topped up by the work of the technical seminar, this approach should lead to the establishment of an inventory whilst helping to identify the regional stakes and specify suitable intervention strategies.

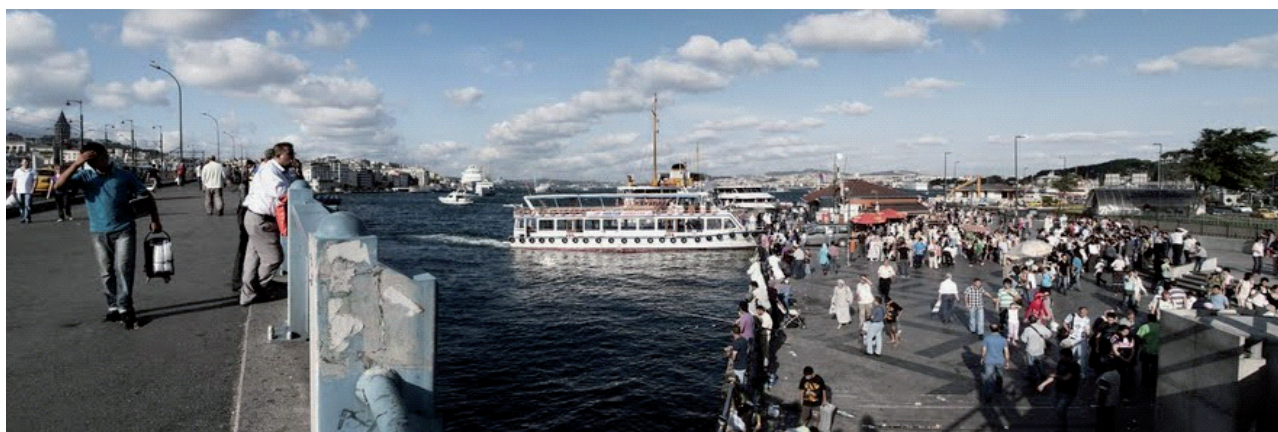
The diagnosis, which aims to be prospective, is thus the fruit of a partnership-based work process dating back to 2005, the main teachings of which it strives to evidence.

Given the recurrent difficulties with the availability of information observed in most of the cases, the point was not to establish an exhaustive inventory of the state of play of urban mobility in the Mediterranean, but rather to pave the way for the implementation of sustainable urban development in keeping with the specific features of the region.

Caution

The case studies behind these analyses were based exclusively on the use of existing data. The gaps in information noted in most cases or differences in the manner in which the data was produced in terms both of periodicity and scale of analysis meant that it was not always possible to refine the comparative analysis of the various situations observed as far as might have been wished.

Multimodality in Istanbul



Context and Issues at Stake

The shared fate of Mediterranean cities

Whilst it is not really possible to speak of the existence of a specific model of « Mediterranean city », the cities in the Mediterranean riparian states nonetheless share many common traits and similarities.

As the cradle of civilisation, Mediterranean cities are marked by a common geographic framework around this remarkable coastal area and by a long history which they all share.

Despite each of them having their own specific features, the traces of thousands of years of economic and cultural exchange, interdependence and successive domination can still be seen today within the various Mediterranean urban structures, in their physical and social organisation as well as in their most everyday operations.

Thirty or so political or economic capitals in the Mediterranean along with various metropolises with several million inhabitants amass the activities, financial resources and most well-off people, whilst housing only a third of the states' urban population.

Apart from the global-scale megapolises of Cairo and Istanbul (almost 16 and 11 million inhabitants respectively and 13th and 28th biggest cities in the world), around 18% of city dwellers live in 85 medium-sized cities of between 300,000 and

one million inhabitants. Virtually half of all urban residents live in more than 3,000 towns of less than 300,000 inhabitants.

Marked Urban Dynamics...

Whilst more than half the world's population now lives in towns, two in every three inhabitants in the countries bordering the Mediterranean already live in urban areas.

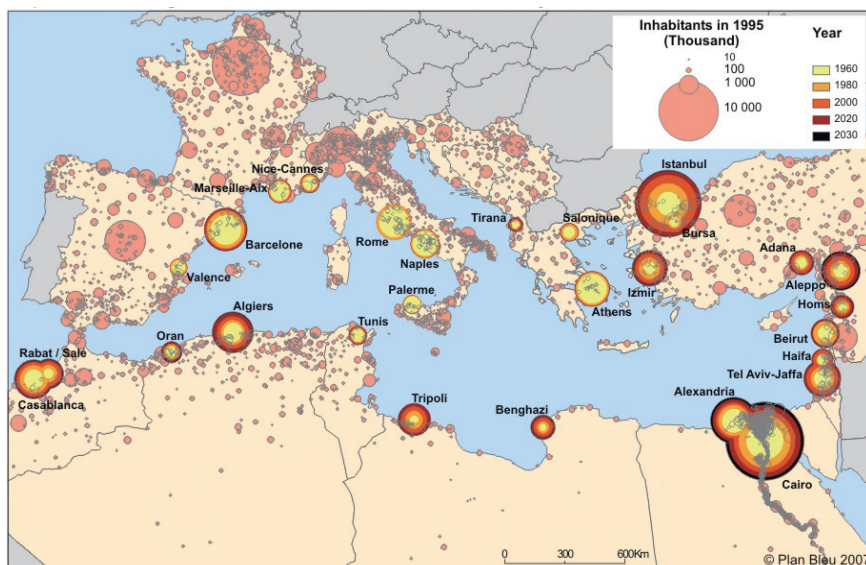
In 2050 or thereabouts, the urban population in the states on the European shore could well stabilise at almost 170 million (140 million in 2005), whereas in the states to the East and South it could double to reach more than 300 million.

The driver of this urban growth is becoming increasingly endogenous, fed by internal redistribution, inter-urban migration and a rural exodus which is either drying up (Egypt, Tunisia...) or holding up (Turkey, Syria, Morocco).

Over a third of this growth will take place in the coastal regions, more specifically in the coastal cities.

Despite the progress which has been made over the past twenty years plus in terms of provision of services, major imbalances continue to exist between large and small cities, central urban and outlying areas and well-off and run-down districts.

Population distribution



Source : Plan Bleu

...within a hot spot for climate change

The Mediterranean region is exposed to many uncertainties. It is particularly sensitive to meteorological mishaps and earthquakes.

The historic vulnerability of the Mediterranean cities is being further exacerbated by the effects of climate change.

The Mediterranean is one of the regions of the world in which the impact of global warming is likely to mark the environment and human activity most strongly.

The effects of a whole series of meteo-physical unknowns, which are already affecting the Mediterranean, are being further aggravated by accelerated coastal urbanisation and climate change: landslides, floods or even forest fires. The coastal areas to the north and south of the basin as well as those with strong population growth (southern and eastern banks) where the dense cities and suburbs are located, are amongst the most vulnerable.

Whilst emitting fewer greenhouse gases (GHGs), the Mediterranean cities are being more affected than other regions of the world, which puts them in the front line as far as drafting strategies for adapting to climate change is concerned.

Urban sprawl and mass motorisation

Once compact, the cities are now spreading, often along the coasts. They are invading the outskirts, swallowing up hitherto independent villages and outlying farming land.

Although walking still predominates as a way of getting from A to B in the cities to the south and east, increasing use of the private car encouraged by public policy aimed at mass motorisation as well as the deterioration in the quality of service provided by public transport has triggered uncontrolled urban sprawl and increased car dependency in most cities.

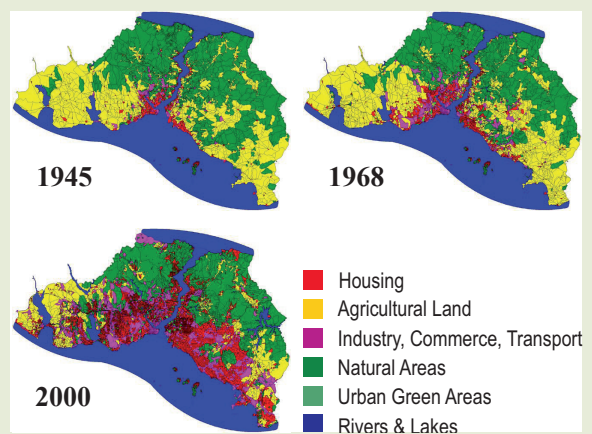
For the conurbations on the northern shore, recent trends have been marked by the dispersal of the population and of jobs as well as by a dual movement of peri-urbanisation and metropolisation over ever-increasing areas, where access to housing for the most destitute is a challenge still needing to be addressed.

To the south and east of the Mediterranean, urban sprawl is being driven in particular by the strength of so-called « informal » housing. Depending on the country and the conurbation, between 30 and 70% of town dwellers are only able to construct their own homes by working through informal channels. In Aleppo, the suburbs of informal housing cover 3,500 hectares and account for virtually 40% of the population, in other words some 900,000 inhabitants.

Istanbul is experiencing uncontrolled informal spread...

Istanbul has faced a major influx of immigrants within a relatively short period of time. Generally speaking, urban development has not been covered by any real land planning or checks on land use. The only measures which it has been possible to take have been «emergency » ones on a more local level, marked by a lack of coordination and consultation on the part of the players involved.

Almost 50% of the population is housed in sprawling districts of unplanned, informal housing. Water reserves and forest areas are under threat, the Bosphorus is deemed to be one of the potentially most dangerous waterways in the world, and the capacity of the recent public transport systems (trams, light railways and metros) is still not enough to relieve metropolitan congestion. These uncontrolled centrifugal forces which are making it difficult to keep a hold on urban spread and the provision of the urban services essential to the inhabitants, are threatening Istanbul's sustainability within her natural environment and in terms of her social cohesion.



Source: Kemper, G, et al. (2000), Monitoring Land Use Dynamics for the City of Istanbul, Rapport final.

...coupled with almost permanent congestion, which is jeopardising the metropolis's accessibility

Whatever the reasons for travel, average motorised trip distance has dropped over the past ten years. With the gradual decentralisation of various activities and services to secondary centres, an increase in trip duration, the relative growth of walking but most particularly quasi permanent round-the-clock congestion on most of the main thoroughfares have all been noted.

Istanbul has a relatively low mobility rate. Marked car dependency, the dearth of alternative provision (rail and river-maritime) and congestion levels on the urban road network with the attendant consequences in terms of longer journey times are impacting quite considerably on demand for motorised trips. According to the demand forecasts established by the JICA using a «no roads and no transport project» scenario (do nothing), the proportion of cars could rise and increase three-fold by 2023 (JICA, IMM 2007).

Urban mobility at the heart of sustainable urban development stakes

This sprawling, heavily car-dependent urban model is struggling to function in the absence of genuine economic development. The time wasted as a result of road congestion but also the size of the energy bill and its impact on the states' trade balance are the main consequences thereof. The resulting cost for the community is very high. Such dysfunction impacts heavily on the competitiveness and attractiveness of Mediterranean cities.

It also leads to the fragmentation and specialisation of urban areas and is reflected in the growing distancing of the least well-off classes, along with a concentration of poverty and disadvantaged people which challenge the cohesion of the urban population.

Finally, the concreting-over of large swathes of natural land is intensifying the pressure on the natural environment and is leading in particular to localised air pollution and a major increase in greenhouse gas emissions.

Despite these structural and economic handicaps, the cities on the southern and eastern but also on the northern shores will henceforth be required to face the consequences of unprecedented global changes linked primarily to global warming but also to globalisation.

Because of their common position within a unique geographical area, but particularly as a result of the multiple mutual influences which have contributed to their current set up, they have the opportunity to compare their experiences, to work together to shape responses tailored to the needs of the local population and to the specific Mediterranean features, and to develop cooperation in order to address these new challenges on what is without doubt an unprecedented scale.

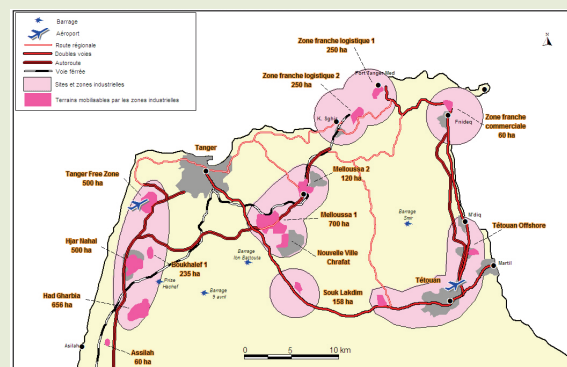
It is the aim of this diagnostic outlook on urban mobility and sustainable development in the Mediterranean to contribute to this drive for knowledge and cooperation.

Tangier, a regional capital surging towards metropolisation...

After several decades during which the Rif region was marginalised, the central authorities have undertaken a development drive towards making the Tingitane peninsula a driving force for bringing Morocco into the globalised economy. The Tangier-Tetouan revival is reflected in the launch of some major projects, particularly in the Tangier-Mediterranean special development zone : a deep-water port complex, motorways and railways, industrial and commercial free zones, tourist complexes...

In 2003, following its official launch at royal initiative, the Tangier Mediterranean Port was constructed in record time. Between 1998 and 2005, permanent jobs in industry in the region increased at the rate of 7.7% per year, higher than at national level (1.2 %); between 2002 and 2004, industrial employment grew by 28 % in Tangier. Industrial investment rose by 13.2% per annum in the region, as compared with 3.9% in Morocco. Experts are expecting some 60,000 to 200,000 jobs throughout the Tingitane peninsula, without the attendant needs for housing or transport having been clearly assessed.

Projects for industrial platforms in Tangier



Source : Regional Investment Centre (CRI)

...which is prompting extraordinary urban sprawl

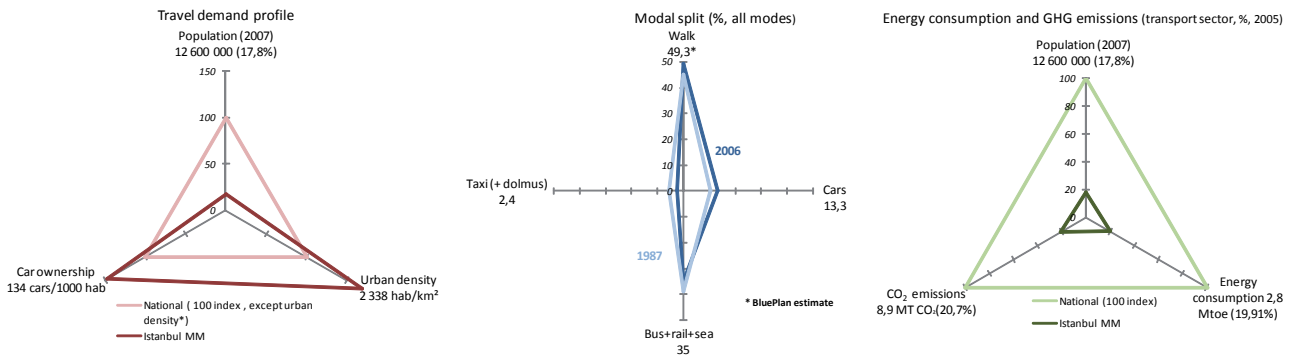
Tangier is experiencing spectacular urban sprawl, with new areas opened up for urbanisation over vast stretches, along the northern coastline as well as in the heart of the Tingitane peninsula. Despite the roll-out of the large-scale infrastructure which is accompanying the Tangier-Mediterranean Port, there is still a discrepancy between the new infrastructure and the deficit of basic services in the rural areas. The lack of amenities continues to be an issue in this region. Road links between the cities and the rural communities continue to be poor. The Tangier hinterland is still an enclave, reached by a few poor quality secondary roads damaged by traffic from the quarries, the surface of which deteriorates rapidly during the rainy season. Even though two new towns are in the pipeline, the challenge of distributing the effects of development throughout the land still stands

Compared profiles of six Mediterranean cities

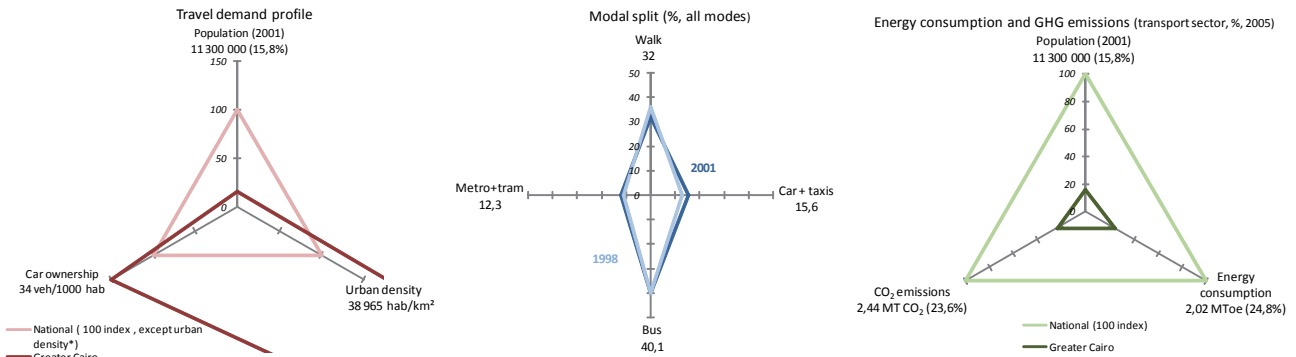
Caution

The plans shown below gather the essential and comparable datas that have been collected within the six case studies. Despite these datas' heterogeneity, in their analysis scales (time and space) as much as their constituent methodology, this system of graphic restitution allows putting in parallel the main characteristics of these cities and illustrate in a relative way the situations that have been observed.

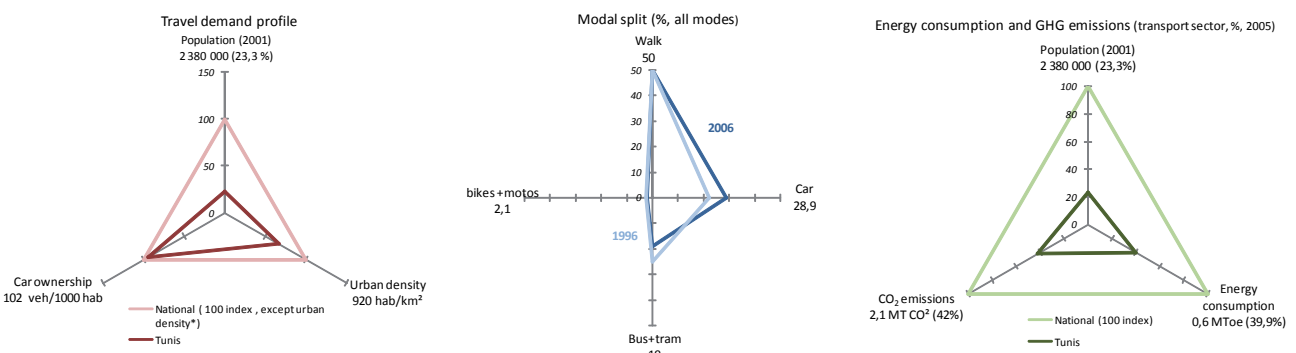
Istanbul presents a considerable density and rate of equipment superior to the other cities of the region. The craft transport offer, traditionally dominant, is constantly decreasing to the advantage of the car.



Cairo is one of the densest cities in the world. In a paradoxical way, walking remains set back when it comes to daily movement compared to some of the region's other cities. Important levels of energy consumption and GHG emissions from transport are recorded, in spite of the dominating place of the collective transports, the rates being most probably linked to the dilapidation of the vehicle fleets and the extensive level of road network congestion.

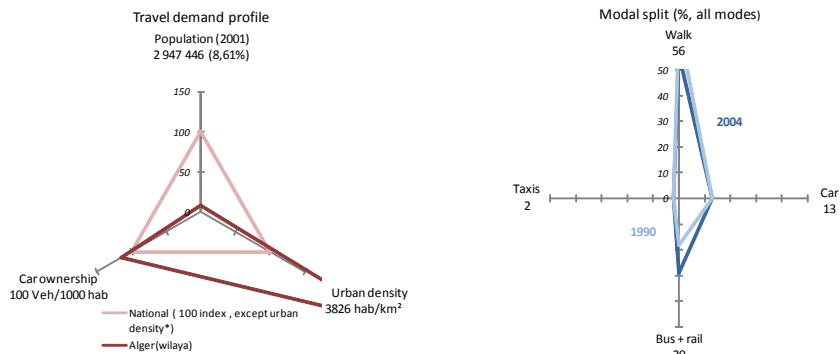


Tunis The urban sprawl dynamic is characterized by a low density as well as constant increase of car use in the daily transports, although there is a most developed offer of collective transports. This translates by very high levels of energy consumption and GHG emission compared to those of the region's other cities.

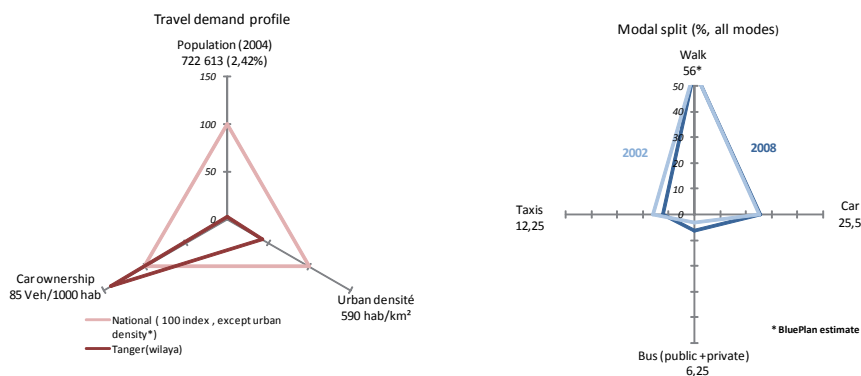


*density: in reference to the global medium of urban density in developed countries, where it reaches 1392 inhab/km². Source : [http://www.goodplanet.info/goodplanet/index.php/fre/Societe/Urbanisation/Urbanisation/\(theme\)/295](http://www.goodplanet.info/goodplanet/index.php/fre/Societe/Urbanisation/Urbanisation/(theme)/295)

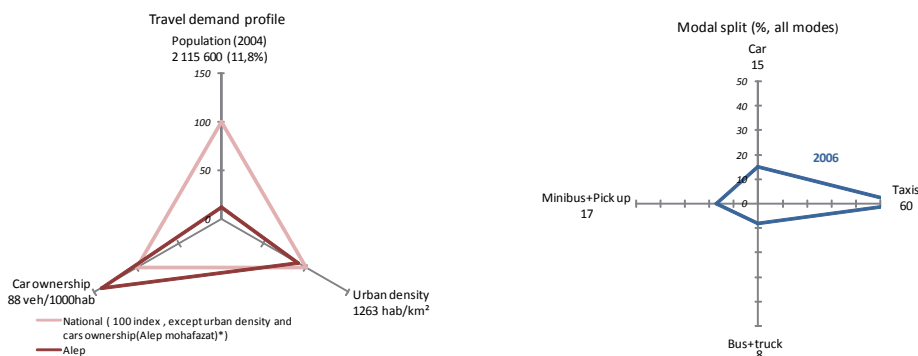
Algiers While not being comparable to Cairo, Algiers is still one of the densest cities in the region. Walking, favored by a restricting geography and the congestion of road networks, keeps a dominant place in the daily transports.



Tangier Though there are some strong recent development dynamics, Tangier is still a city of less density. A motorization level set back from the cities of the region and a great weakness from the collective transports offer (public and private) make difficult the urban transports. Walking remain the most common means of transport.



Aleppo presents a density and motorization level comparable to Tunis and Tangier. There is an existing offer, which is not insignificant, from the collective transports, but the main part of the daily transports is ensured by taxis and other craft transports (minibus, pick-up).



*density: in reference to the global medium of urban density in developed countries, where it reaches 1392 inhab/km². Source : [http://www.goodplanet.info/goodplanet/index.php/fre/Societe/Urbanisation/Urbanisation/\(theme\)/295](http://www.goodplanet.info/goodplanet/index.php/fre/Societe/Urbanisation/Urbanisation/(theme)/295)

Overview

A worrying situation across the board

In most of the situations observed to the south and east (*see above : Comparative Profiles of six Mediterranean Cities*) but also in certain towns on the northern rim, the trends are uneven but converging:

- **A constant increase in demand for travel**, linked to urban sprawl and the decoupling of home from work,
- **Generalised congestion** along the main thoroughfares and, consequently, a drop in travel speed, particularly marked in Cairo and Istanbul,
- **A mass motorisation movement** encouraged by the opening up of the markets and the introduction of consumer credit, dominant in the south and east.
- **Recurrent shortcomings in public transport provision** in terms of servicing, level of service, run-down fleets as well as inter-modality.
- **A constant rise in GHG emissions linked to the transport sector**, mainly road transport which is heavily dependent on fossil energy.

Gradual awakening to the stakes relating to urban mobility

All of the situations studied demonstrate the implementation or planning of infrastructure and urban transport projects aimed at developing public transport provision : the Algiers metro, the extension of the Cairo metro network, Istanbul's exclusive lanes with high levels of service, and tram projects in Morocco and Tunisia.

These examples, the fruit of public policy towards developing collective public transport, illustrate the gradual awakening of the public authorities to the importance of urban mobility issues and their associated stakes- economic attractiveness, urban accessibility, local pollution or reducing the carbon footprint.

Cairo, the first city on the continent to have its own metro...

With a first regional line opened in 1987, which carries over a million passengers every day and an urban line which opened in 2000 and carries 500,000 passengers, the metro now accounts for a significant share of urban travel in the city (17 % in 2001). With some 80 km for the 2 lines in operation, the metro is far and away the most effective mode of public transport in Cairo.

This network, which is run by the Egyptian Company for Metro Operations and Maintenance (ECM) under the direct supervision of the Ministry of Transport, is currently being developed. Phases I and II of line 3 are now under construction, and are expected to be brought into service in 2010 and 2013 respectively.

Metro in Cairo



... but generally under-proportioned public transport provision

Urban public road transport is provided by one single major public company, the Cairo Transport Authority (CTA). Nevertheless, a large number of more or less informal minibus companies are also involved in providing public road transport. The CTA is a public company with 42,000 employees. It has a fleet of 4,500 vehicles, in other words a ratio of 8-9 employees per vehicle. Moreover, there are some 80,000 minibuses and almost 60,000 taxis in operation.

Finally, the suburban train and tram system, a throw-back to the colonial age, has been in constant decline since the 1950s. Operated by the CTA, the two tram systems, i.e. the Heliopolis tram route, which mainly serves the residential districts of Heliopolis and Madinat Nasr to the north east of Greater Cairo and the trams on certain lines to the north of Cairo and 15 May City to the south, play only a minor role in urban travel. Compared with other formal modes of transport this network is now little used.

However, awareness is still limited as regards town planning and integrated transport/town planning approaches are few and far between : highly « functionalist » urban development practices can be seen virtually everywhere, particularly through the importation of generic urban products, which are inspired by international standards and car-dependent to the detriment of the creation of public space: housing estates, shopping centres, new towns...

These practices are marked on the part of public and private players alike by the clear predominance of operational over territorial reasoning, which can also act as an integrator.

Poor levels of service in Urban Public Transport Systems

In most Mediterranean cities, urban public transport does not provide satisfactory transport conditions in terms of comfort, regularity of service and safety: routes tend to be over-loaded, the vehicles often run-down and rarely air-conditioned. In the absence of priority traffic conditions, journey times are too long, fares do not always take account of connection possibilities and inter-modality link-ups between the various systems are poorly developed.

Thus, public transport still has a negative image and would appear to be aimed at captive populations still without access to a car.

Soft modes largely ignored by public policies and projects

With the notable exception of Cairo, walking is the main means of transport for urban populations in most of the Mediterranean cities on the southern and eastern shores.

However, most of the time soft modes do not feature among the concerns of the public authorities as they are designing or implementing urban transport projects.

In Istanbul, diversified and efficient public transport provision...

Istanbul is served by a relatively efficient and well-managed public transport system, which is constantly improving. A variety of rail transport systems are used (light railway, tram, suburban railway, metro), notably including a particularly efficient bus line with its own exclusive lane, which is currently being extended. An electronic ticketing system (Akbil) allows for connections within the public transport network (buses, ferries and trans-European rail transport system).

Buses and minibuses (including the «dolmuş» which operate along certain routes) comprise the bulk of the public transport network: 591 bus routes and 123 minibus routes provide a service for over 4.5 million passengers on a network of 6,100 kilometres. The vast public bus network numbers almost 4,222 buses, 2,858 of which are operated by the IETT public company and 1,347 by private operators.

Bus in an exclusive lane in Istanbul



...which cannot keep pace with the explosion in demand

Istanbul's public transport system is struggling to keep pace with the rapid rate of growth of the urban structure. The local authorities have been caught up by the pressure of urbanisation without managing to free up sufficient resources to respond to this expansive type of growth. Over the past decade, the proportion of private cars in everyday travel has risen from 19.3% to 26.3%, whilst taxis and « Dolmuş » (collective taxis) fell from 9.4% to 4.8% over the same period, illustrating the loss of attractiveness on the part of public transport.

With the extension of the metropolitan area and with the IETT national bus company not in a position to make the necessary investment, services for people who are often on low incomes have developed according to the entrepreneurial mode. Cooperatives of minibuses and other small capacity vehicles such as « Dolmuş », or collective taxis, have been set up to serve the new urban suburbs. Likewise, employers and academic establishments contact service companies directly to organise pick-ups for their employees and students.

In Tunis, public transport provision structured around public operators...

Tunis is an exception in the Mediterranean, enjoying plentiful and varied transport provision organised around a single public company responsible for managing passenger transport on the conurbation's bus and light railway networks. The Tunis Transport Company (STT) was born in 2003 of the merger between the National Transport Company (SNT) and the Tunis Light Railway Company (SMLT). It carries an annual total of 460 million passengers. With 4 operators for 35 routes and the stated aim of capturing 5% of the market, the role of the private sector is limited. Informal transport using minibuses (rental vehicles) only comes into play for suburban and inter-urban provision.

This classical but increasingly unusual set-up has meant that public transport has thus far managed to retain a significant share in travel and has led to a degree of consistency in transport provision. This diverse and complementary network (tram, light railway, bus, etc...) is just waiting to develop into a fully integrated Urban Transport System.

Light Railway in Tunis



...but struggling to maintain an adequate level of service

Constrained by wide geographic coverage and poorly focused on the main urban centres, like the rail networks (metro and Tunis suburban railway lines) the public land transport companies' urban and suburban routes are fully loaded at peak hours (90 % to 100 %) whereas at off-peak times traffic on certain routes drops off considerably, to the extent that the average fillage rate for buses is very low (an average of 12 passengers for the TUT).

The fact that the public modes of transport are saturated in this way is not without consequence for the private operators who, in turn, are required to carry excess users. At the same time, the tough general traffic conditions and the lack of amenities to facilitate bus travel are the main causes behind a drop in service speeds in virtually all the major cities, falling in certain cases (the city of Tunis in particular) to less than 10 km/hr.

As in Barcelona or Lyon, which are exemplary cities in this respect, walking nonetheless has to play a central role in feeding into the major public networks.

As such, how public areas are addressed in terms of inter-modality, pedestrian access as well as urban regeneration should be the focal point of integrated town planning/transport approaches.

In Cairo, extreme density...

With almost 39,000 inhab/km² the city of Cairo is one of the most dense in the world. It ranks fourth amongst the cities with the greatest density in developing countries. However, walking as a means of travel still lags behind the other cities in the region, local traffic, safety and comfort conditions being notoriously inadequate. The virtually total lack of pavement continuity on the streets of Cairo, compounded by major congestion, make any form of non-motorised travel very difficult.

Central district of Cairo



...which does not allow satisfactory accessibility to the urban areas

As in most Mediterranean cities, walking is a dominant means of transport, accounting for almost a third of all daily trips. However, pedestrians face extremely challenging travel conditions. Walking through the streets of Cairo is a veritable assault course and may even prove genuinely dangerous when it comes to crossing the main thoroughfares. Pedestrians are not a priority either for drivers or the traffic police, which can only push users onto individual and motorised modes of travel wherever they are in a position so to do.

Informal transport, a feature shared by the cities to the south and east of the Mediterranean

Whatever name they go by (collective taxis, big taxis, shared taxis or « Dolmus » in Istanbul), the range of informal transport mechanisms in the cities to the south and east of the Mediterranean is vast. With the exception of Tunis, the informal sector represents a highly significant sector of the market for urban transport provision. In Tunis it is now pivotal following several years where institutional provision was totally lacking.

This feature is not specific to the Mediterranean cities, with this type of transport being widespread in Africa and South America. Their constant development is coming about in conjunction with the extensive, rapid and spontaneous urbanisation dynamics to be seen in these cities, where institutional public transport provision is unable to keep pace with growing demand.

Lack of genuine urban governance

The modes of governance in the vast urbanised areas on the southern and eastern rims but also sometimes to the north, appears unable to respond to the demands of sustainable urban management.

At territorial level : with the exception of Aleppo and Istanbul, where far-reaching institutional adjustment has been carried out through the merging of urban communes into a metropolitan body, urban sprawl is spilling over official administrative boundaries and constantly disconnecting territorial administrative organisation just that little bit further from its real purpose.

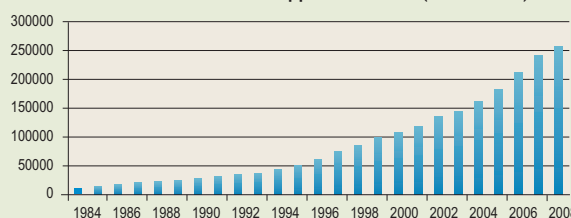
At institutional level : with the relative exception of Istanbul, the cities studied are marked by the predominant role of the State, major administrative centralisation and a lack of autonomy at the intermediate levels.

In Aleppo, informal urban development...

Since the 70s, many of the city of Aleppo's urban extensions have been the result of informal urbanisation. The city's geographic location has encouraged urban sprawl and expansion along the main thoroughfares. Unprepared for the arrival of ever-increasing numbers of inhabitants, the conurbation has witnessed the construction of areas of illegal housing. Thousands of homes have been built without permission and not in compliance with town planning rules.

In 1980, the areas of informal housing covered an overall total of 945 hectares, home to some 285,000 people, in other words almost 30% of Aleppo's population. In 2000, some 2,400 hectares had been taken over by this type of district. Non-regulatory housing districts currently cover around 3,500 hectares or 21% of the city's total area (16,250 hectares), amassing virtually 40% of Aleppo's population.

Growth of the vehicle fleet. Aleppo Mohafazat (1984-2008)



Source : Plan Bleu Plan Bleu study case : URban mobility in Aleppo. Sakkal Salwa, Al Mohamad Riad (2009).

...along with a constant rise in individual motorisation and informal transport

Most of Aleppo's inhabitants do not have their own car. However, the car pool has grown considerably over the last few years as a result of Syria opening up economically : with 253,960 vehicles in 2008 for 4,045,166 inhabitants, the motorisation rate in the Aleppo mohafazat stands at 62 vehicles for 1,000 inhabitants and it has been estimated at 88 per 1, 000 inhabitants for the conurbation of Aleppo.

As in all Syrian cities, Aleppo's public bus transport services have been deteriorating since the 80s, which has driven the opening up of the sector to private operators: about 2,300 omnibus vehicles. Added to the 15,000 taxis, this large number of omnibuses has led to traffic jams, long waiting times and a decline in service speeds.

In Cairo, public transport services unable to maintain an adequate level

Over the last ten years, passenger numbers on regular bus routes have dropped off steeply, falling from almost 40% of modal split to barely above 20% today. Although the opening of the metro helped feed this decline in numbers, the inability to maintain a satisfactory level of service on the buses both in terms of quality and regularity has led to this major decline in their market share of urban travel. In parallel to the undoubted efficiency of the metro, the trams have been partially dismantled, thus what remains is now only marginal in terms of modal split.

Specialised and informal public transport system in Greater Cairo's new towns



The on-going development of irregular and informal urban transport

The shortcomings in public bus and tram transport has allowed informal public transport systems to develop on a considerable scale, to the extent that « shared taxis» and minibuses alone now account for almost half of all public transport. Although the share of buses and minibuses in daily travel across all modes is in constant decline (70 % in 1971, 41 % in 1987 compared with a mere 22 % in 2001), the proportion of daily travel carried out by taxi or collective taxi has risen on a regular basis, from 6 % in 1987 to 37 % in 2001. Faster and more adapted to market needs (services/frequency), collective taxis have attracted a large number of bus users. They have thus provided a better feeder system for the metro stations than regular buses.

The current number of taxis can thus be estimated at about 60,000, despite a four year moratorium on the issuing of new licences, in other words virtually twice the number of officially granted licences. The same applies for the minibuses, of which over 80,000 would appear to be in operation for a mere 20,000 licences issued.

At technical level: the limited attractiveness of the public service and the fact that urban expertise is widely scattered between many institutions both public and private, is undermining expert capacity, resulting in the predominance of operational reasoning and poor regulation of the informal or industrial private sector.

Sectoral partitioning and institutional competition

When decisions are taken to the highest level, institutional rivalry can be exacerbated.

More often than not this rivalry is intensified by professional culture clashes (transport/town planning) and can also trigger competition between institutions in the area.

Roles are often attributed in confused fashion, which can undermine the coherence of public action.

The relatively systematic creation of autonomous public agencies devoted to rolling out a territorial project does not back up the conventional administrative structure, nor does it facilitate optimisation of the human resources available.

Although coordination bodies exist, more often than not they have not been attributed sufficient powers to be able to act as arbitrators.

A lack of continuity and coherence in public action

The lack of any genuine local governance able to coordinate the local and central institutional players is reflected in the field in major contradictions between the public policies implemented.

The multiple project opportunities generated by the recent economic context (property bubble and massive foreign investment) have only served to render the action of the public authorities even more inconsistent in most of the situations observed.

In Istanbul, an institutional expansion process is tending to track urban expansion dynamics...

Between 1950 and 2007 the number of districts doubled, rising from 16 to 32. Istanbul now comprises 32 districts, 73 municipalities, 151 villages and 805 quarters... Since July 2004 the administrative limits have been changed and expanded from 1830.92 km² to 5343.01 km² to cover the entire province. This new area, which takes account of the territorial level of operations, particularly from the economic point of view, allows for more relevant and efficient strategic approaches.

The Istanbul metropolitan municipality (IMM) shares the administration of this extended area with 73 lower-level authorities: 32 provincial sub-municipalities and 41 first-level municipalities. The Istanbul Metropolitan Municipal Council is the IMM's decision-taking body. It comprises the mayor of the metropolis, 73 elected representatives from the 32 district municipalities and the 41 provincial ones, plus a further 274 members from these same authorities. This institutional adjustment process is still underway, as witness the fact that since April 2008, the Istanbul metropolis has grown from 32 to 38 districts....

...but with a deficit of governance despite the existence of dedicated urban transport coordination bodies

The Istanbul Metropolitan Municipality or IMM is the authority responsible for organising urban transport. It is in charge of or supervises a range of bodies dedicated to land use planning, regional local planning, real estate management, transport and traffic regulation in the conurbation. Two specific bodies (UKOME and AYKOME) are devoted to coordinating the transport sector with all the authorities and bodies involved with infrastructure planning, programmes and projects. Overall, urban transport planning and management involves a total of some 50,000 employees.

In part, the differences which exist in terms of intervention strategy and the lack of coordination between the numerous State departments and municipality agencies constitute one of the main reasons for the transport system's lack of efficiency. Thus, the fragmentation of decision taking within the state institutions hampers the genuine efficiency of strategic planning approaches.

The fruit of the world's oldest urban civilisations, many of the Mediterranean cities studied are paradoxically marked by a memory block on the part of city practitioners and professionals in terms of area development and operation and previous urban planning exercises.

Finally, the technical institutions are not particularly concerned about capitalising on knowledge, which does not allow local practitioners to fully grasp the dynamics at play.

In Tunis, well-structured regional local planning...

City management is governed by the Land and Town Planning Code (CATU), which determines the environmental planning and management instruments according to a model inherited from French tools and methods. Since 1990, town and transport planning exercises for the Tunis conurbation have multiplied : the Greater Tunis Urban Development Plan (SDA) to run until 2021 was initiated in 1995 in parallel with the drafting of the national land planning programme and the Regional Transport Master Plan (PDRT), which was tailored according to the Greater Tunis SDA. Planning of the urban transport systems is based on the periodic collection of data such as domestic surveys and Urban Travel Plan-type methodological approaches copied from the French model (PDU). However, the most recent «domestic survey» dates back to 1994. Since the necessary funding for the update initially planned for 2004 was not found, this information will have to be updated in the light of recent developments in the conurbation and its operations.

... but inadequate coordination of local players to be able to control urban development

The many planning exercises conducted in Tunis were not able to take full account of the new metropolitan scale or, more recently, the major real estate projects around the main Tunis lakes. The various ministries or governorate services involved in urban management do not appear to have their own expertise. They confine themselves to a strict contracting authority role, with strategic studies being commissioned from local consultancies following calls for tender launched by the various ministerial departments, administrations and public bodies.

The mushrooming of players (Ministries, Governorates, Communes, agencies and public operators) inevitably gives rise to coordination difficulties and has public players vying against one another. The increasing complexity of the system of players is intensified by the continuing highly marked sectoral partitioning within Tunisian institutional organisation :

The transport sector in Greater Tunis involves some five different ministries. The forms of coordination between these ministries are still unclear, and it appears likely that only arbitration at the highest level will manage to establish a common line. Thus three real estate agencies: the Agence Foncière d'Habitation (AFH), the Agence Foncière Industrielle (AFI) and the Agence Foncière Touristique (AFT) were set up in 1973 with a view to conducting housing, industrial and tourist zone projects. Enjoying the prerogatives of a public authority in terms of pre-emption and expropriation, they are behind the roll-out of various major housing, industrial and tourist zone operations. With a sectoral rather than a territorial structure, their work on occasion contradicts strategic ministerial plans head-on.

Little account taken of poorly identified impact

Besides the fact that global warming is likely to have a marked effect in the Mediterranean, the region also presents a set of specific natural aggravating factors, which encourage the production of ozone: relief and hot, dry climate, particle concentration, proximity of the desert...

In these cities, the climate, the relief and the winds play a particularly important role in photo-chemical pollution, which is likely to create or aggravate respiratory problems (allergies, asthma...). The calm, anti-cyclonic conditions often seen in the summer encourage temperature inversion phenomena in the city centres, which may lead to virtually permanent pollution peaks in many of them, as is the case in Athens, Cairo, Genova, Barcelona and Marseilles-Aix. Such phenomena lead to a concentration of the main chemical (CO, NO_x, SO₂) and physical (particle) pollutants linked to transport, housing and industry.

Where air quality measuring stations exist, their networks, monitoring and the circulation of the results still appear inadequate.

Moreover, the lack of monitoring indicators and assessment of the impact on public health can only be deplored, particularly as regards respiratory disease linked to the concentration of air pollutants in urban areas.

A recurrent lack of data

Access to data is clearly very difficult in most of the cities studied: lack of reliable information, patchy if not totally non-existent data. Where data does exist, it tends to have been produced for some specific project. Consequently, it does not cover the entire area relevant to the understanding of how conurbations function overall, nor is it regularly produced.

Under these conditions, local practitioners usually lack the fundamental elements of knowledge as they design or assess sectoral plans and programmes.

In Algiers, a major increase in motorisation...

Outlying urbanisation, higher standards of living and longer travel distances as a result of urban sprawl have been instrumental in households acquiring private cars. This trend has been intensified by the arrival of car dealers, car loan access facilities, the deterioration in public transport provision and the attraction of the private car.

In 2004, 58 % of Algerian households did not own a vehicle, 36 % owned one and 6 % owned at least two: although multi-motorisation is still rare, it will increase unless public transport provision becomes efficient, effective and legible for the user. The rate of household motorisation is higher in the outskirts than in the central districts, particularly for the well-off social groups.

Besides the harmful effects it produces- air pollution, traffic congestion and saturation of the road network- the increase in private car trips in Algiers is driving a constant increase in the consumption of fossil fuels, which are not particularly expensive in this oil-producing state.

...accompanied by the marked "dieselisation" of the car fleet

The increased consumption of fuel is particularly marked in the case of diesel, which doubled between 2000 and 2008. Measures were taken by the public authorities in order to reverse this dieselisation trend by encouraging the use of gaseous fuels and other so-called clean fuels: lead-free petrol, gaseous fuels such as LPG/C and CNG.

Various measures were adopted in support of LPG: the conversion of 1,000 taxis in Algiers to LPG/C, the installation of LPG kits at preferential, subsidised prices for clients and car dealers, very attractive LPG/C prices at the pump, the introduction of a funding mechanism to allow individuals wishing to convert their vehicles to LPG/C to have access to interest-free credit.

Moreover, the Ministry for Energy and Mines has launched a programme of action aimed at the use of compressed natural gas (CNG) in particular for public transport in the urban environment. The introduction of this gas onto the national market and the installation of converter kits on vehicles has led to the opening of two CNG stations, the conversion of 120 light vehicles belonging to Sonelgaz and five Sonelgaz buses running on natural gas as well as a five to ten bus programme for ETUSA.

Current Dynamics

Relatively unsustainable prospects...

Little account taken of specific local features

The strong desire of the people and their decision-takers to achieve « globalised » consumption patterns is leading to the transposition of exogenous products, methods and practices in both urban planning and transport. Pyramids, shopping centres, golf courses and housing developments are nowadays just as likely to be found in Cairo as in Las Vegas...

The origin of the investors behind the major urban projects but also the constant influence of international expertise on the local level is making it more difficult to take the local context into account.

Questioning the role of the car in the city

In virtually all the situations studied, and whatever their level of development, mass motorisation dynamics and public policy towards kitting out households or developing the road infrastructure were observed.

Future urban public policy in the Mediterranean will need to tread the line between, on the one hand, the need to reduce dependency on the car and bring mass motorisation dynamics under control and, on the other, policies aimed at opening up the local markets to imported goods and access to car loans.

In certain cities on the northern shores, a shift in modal split is starting to be observed in favour of public transport, along with an un-coupling between the level of motorisation and car use, but greater consistency in public action in the urban areas on the southern and eastern banks still remains to be sought.

In Tunis, dynamism and urban sprawl...

Despite moderate growth when compared with other cities to the south, since the 70s Tunis has been experiencing major urban sprawl. In the early 60s, the city extended over some 10kms, whereas it now measures almost 40km from north to south. It is this sprawl which has produced the significant drop in density which, from an average of 101 inhabitants/ha in 1975, reached 92 inhabitants/ha in 1996. Until the 80s, almost 60% of jobs were still concentrated between the Kasbah adjoining the medina- a major administrative centre where most of the ministries were located- and the European town- the conurbation's commercial and administrative centre- in other words in a part of the town which represented over 45% of Tunis's population.

Simultaneous movements involving the extension and the specialisation of urban areas have led to the gradual uncoupling of economic and residential functions, which in turn has meant that both the number and length of home-work trips have increased sharply.

Tunis skyline from the lakeside



...driven by a collection of urban projects which, it is hoped, will produce a « system»

Since 2007 some new forms of urban mega-projects designed by promoters from the Persian Gulf have been established around the main lakes of Tunis. Moreover, these major projects would appear to evade the urban planning process which has been developed. The projects rolled out on the northern coast or to the west should lead to the freeing-up of the Tunis hyper-centre and encourage the development of a multi-centre set-up by the concentration of medium and high quality residential pockets. This is having a major impact on the centre of Tunis, which kept its back firmly turned on the lagoon as long as it was no more than a polluted lake. However, by providing a home for a highly motorised population, these projects will play their part in the congestion of part of the road network. Indeed, these districts will be occupied by households whose home-work trips will use routes already saturated at peak times.

In Cairo, mass motorisation dynamics ...

Whilst two-wheelers represent a mere 10% of all vehicles registered in the governorate of Cairo, with almost 4.25 million vehicles (private and other) almost a third of all private vehicles registered in the three governorates of Greater Cairo and almost half of all vehicles registered in Egypt are to be found on the roads of the Greater Cairo Region. Since 1973 and particularly since the country opened up economically, allowing the mass importation of foreign vehicles, registrations in the governorate of Cairo have been shooting up in exponential fashion. From 1976 to 2001, the number of cars rose from about 86,000 to about 625,000 i.e. a remarkable 727% growth rate in 25 years (in other words, pushing 30% per year!) However, whilst motorisation rates are still rather low compared with other cities around the world with 84 vehicles/1000 inhabs (including taxis), the 2002 Greater Cairo Region transport plan forecast that the total number of vehicles would continue to rise to reach over 2.5 million vehicles in 2022.

Density and congestion in Cairo



... which are aggravating already widespread congestion

Greater Cairo generates almost 20 million motorised and almost 7 million non-motorised trips per day. Two thirds of the motorised trips use public transport. The 2002 regional transport plan forecast for 2022 that the number of motorised trips would grow by about 3% each year. The traffic management provisions, which are rather odd to say the least (scarcity if not complete absence of signs, 3 lines in two lanes), can only exacerbate what is already a difficult situation and one which cannot be evaluated due to the lack of qualitative data on travel speeds or the frequency of congestion on the roads. As the rate of motorisation rises, the current poor traffic conditions are likely to get even worse, particularly along the main corridors of development. This can only exacerbate the serious traffic problems in the conurbation, where the situation is one of the worst in the entire world.

Network congestion, pushing up GHG emissions

The prospect of breaking out of the vicious circle which has been observed of motorisation dynamics/ network congestion/ decrease in travel speeds/ deterioration of public transport/ motorisation is still not to hand in most of the situations studied.

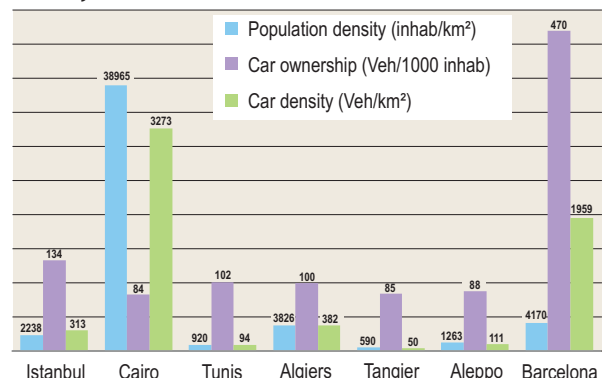
In Cairo and Istanbul, as in the other cities studied, the dilapidated car, bus and collective taxi fleet as well as the drop in travel speeds caused by major congestion of the road network are factors which clearly aggravate GHG emissions.

Poor cold yield and lack of performance on the part of old, low speed engines are just one of the causes. Although the gradual renewal of the vehicle fleets is bringing improvements, particularly through the adoption of European standards in Istanbul, they are still not enough.

There are several examples of pro-active public policies towards renewing the car fleet and thus reducing GHG emissions: Bonus-malus and scrappage premium systems in Europe, replacement of the taxi fleet by Natural Gas Vehicles in Cairo, the conversion of buses/vehicles to liquefied natural gas in Turkey and Algeria. The fact remains that the trends observed in the Mediterranean will without the shadow of a doubt have major consequences in terms of final energy consumption, GHG emissions and local pollution.

It emerges from the situations encountered and described that technological progress cannot be the only public policy lever for reducing GHG emissions in the urban transport sector.

Density of vehicle fleet in seven Mediterranean cities



Source: Plan Bleu

Informal transport, an inevitable player in urban transport

The economic models underpinning the informal systems present in the Mediterranean are relatively similar in all of the cities studied. Based as a general rule on private investment (operating licences and vehicle purchase), informal transport is an important provider of jobs in the cities, both in terms of running and maintaining the fleets of vehicles. It thus comprises a crucially important socio-economic sector in the cities.

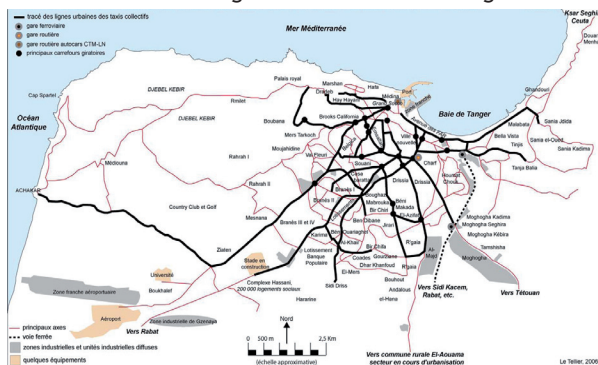
Within this context, any initiative aimed at regulating the so-called informal sector raises particularly important economic and political stakes for the people directly concerned as well as for the competent authorities.

These informal transport systems contribute to congestion by increasing road traffic and aggravating local pollution as a result of the dilapidated state of the vehicle pool.

However, although this needs to be specified in greater detail by a case by case approach, the various informal public transport systems nonetheless present a rather positive « carbon balance » compared with traditional public bus systems when their effective passenger numbers are thrown into the balance.

The shared operational mode (up to 5 or 7 passengers per car), the routes and request stops result in the optimisation of load factors for these systems compared with « institutional » transport, whose levels of service and passenger numbers are in constant decline virtually across the board.

Urban lines of the large collective taxis in Tangier



In Tangier, informal transport plays a dominant role in urban transport...

After several years of inadequate if not non-existent public collective transport provision, the number of collective taxis has shown a steep rise in Tangier. During the 80s, these micro-operators were granted the public transport routes within the municipal boundaries and were able to enjoy forms of exclusivity in some sectors. In the Tangier wilaya, the number of taxis has risen sharply since 1984: it has risen 6.6-fold in 20 years, with 433 vehicles in 1984, over 700 in 1994 and 2,861 in 2004. Between 2000 and 2003, whilst the number of large taxis rose by a quarter, the number of small taxis doubled.

In 2001, operation of the Tangier public transport network (Autasa) was granted to the Spanish Ruiz group, which has introduced the same management, sales and operational methods as it applies in Europe. Although bus provision has been improved over the past ten years by the creation of new routes, it still lags behind the demand for travel. Autasa currently has 76 buses on the road in Tangier, i.e. an average of 3.3 buses per route, one bus per 13,000 inhabitants, compared with 600 buses planned for Rabat-Salé by Veolia Transport, i.e. one bus per 3,300 inhabitants.

Although the company enjoys a monopoly on bus services, it faces stiff competition from the taxis, which offer greater flexibility in their routes and timetables, without being limited by the constraints of a public service. The faster bigger taxis, which are better adapted to the width of the roads and to hilly areas, are often more practical, whilst not costing the user any more. In Tangier, taxis account for about 5% of the vehicle fleet, but between a quarter and a half of all traffic.

...which does not prevent the use of specialised operators to offset immediate shortages

Given the low level of public provision, a large proportion of all urban trips use other collective types of transport- either informal (large taxis, mini-buses, combined transport) or specialised (company workforce, school buses).

Workforce transport services on behalf of others were institutionalised in 2003 in response to the concerns of industry. The vehicle fleet for this type of operator grew from 294 minibuses in 2003 to 883 in 2009, in other words a three-fold increase in the number of places offered in six years, and now has the same transport capacity as the taxis.

These specialised forms of transport meet rapidly and constantly growing needs against a backdrop of major economic expansion with its corollary of industrial and tertiary sites. Whilst this allows a more efficient service to be envisaged in the short term for the industrial areas and connections with the Tangier-Mediterranean Port, the mushrooming of operators will in the longer term render more complex the introduction of integrated, coordinated public transport provision in the city.

Specialised transport, leading to counter-productive effects

Given the inadequacy of public collective transport provision, the growth of specialised school, university, administrative or private transport would appear to be gaining ground to the detriment of the creation of global, coordinated transport provision.

In Tangier, in order to respond to the major and immediate needs linked to surging economic development and the construction of some major industrial units, but also in Algiers with its large student population, which enjoys fare benefits, this would seem to be the preferred sort of response within a context of inadequate regular provision.

Whilst providing for an immediate response to the daily mobility needs of a dependant population, such mechanisms also represent direct competition for institutional forms of transport. By rendering operator coordination issues more complex, this once again further compromises the emergence of a global public transport provision.

Public health, one of the major urban mobility stakes

In virtually all the situations observed, the decentralisation of polluting activities and industry has already come about and urban transport is now one of the main causes of GHG emissions and local pollution.

More than public transport passengers, passengers in private vehicles are the first to be affected by the inhalation of particles inside their cars, particularly when they are stuck in traffic jams. In Europe, it is estimated that measures aimed at reducing particle concentration have allowed 348,000 deaths per year to be avoided, 40,000 of them in France. The cost of decreased life expectancy due to air pollution has been estimated at almost 16.3 billion €/yr in France, where a « Particle Plan » was got underway following the Grenelle environment forum.

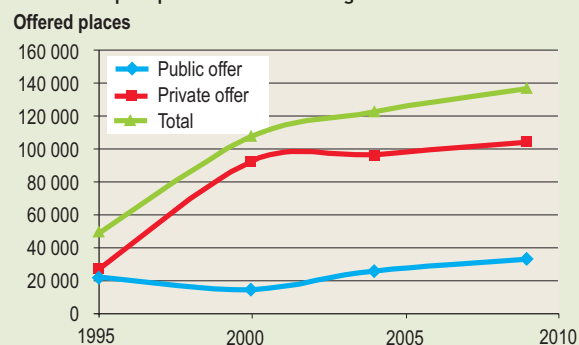
However, it is still very difficult to establish this type of estimate for the cities to the south and east, and specific research still needs to be conducted in order to take this type of analysis further.

In Algiers, « constant » progression in public transport provision... to the benefit of specialised private operators...

Since 1963, public transport in Algiers has been provided by a single public company, supervised by the Ministry of Transport—the Régie Syndicale des Transports Algérois (RSTA). Since 1988, transport markets have been opened up to a whole range of private operators as a way of combating youth unemployment. The creation of micro transport companies has been encouraged by the State through low interest bank loans for the purchase of vehicles and a five-year tax exemption.

Following the abolition of the subsidies it had received since its creation, the former RSTA (which became the ETUSA), ran into major financial difficulties and was never able to provide a complete and fair service to the various parts of the conurbation. Consequently, the shortcomings of the public operators are compensated for by the services of the 2,787 private operators who provide a more finely tuned service to the outlying areas, thus meeting travel needs not satisfied by institutional transport. Since 2001, the ETUSA has been taken over by the public authorities. But the excessively slow improvement in its service provision has had a knock-on effect on the increase in motorised trips using private cars. Urban transport by taxi, with 11, 000 individual and collective taxis, has virtually replaced public transport in the hyper-centre.

Public transport provision trends in Algiers



Source: Plan Bleu computation, Plan Bleu case study: Urban mobility in Algiers: trends and prospects. Safar Zitoun Madani, Tabti-Talamali Amina (2009).

...driven by the virtually total subsidisation of student transport services

The Algiers situation is a case unto itself in the Mediterranean—university transport is subsidised by the State to the tune of 95%, making it virtually free for students. Student transport is operated by « Tahkout Mahieddine Transport », which since 2004 has held a monopoly on university transport in the wilaya of Algiers. This company has become the biggest private transport operator in Algiers, exceeding the provision of the public bus companies and private operators alike.

Moreover, the Takhout buses are new and in excellent condition. The company accounts for about 10% of total trips in the Algiers conurbation and has a fleet of 1,387 buses, whereas in 2009 ETUSA was operating a mere 302 buses.

Trends towards sustainable urban mobility

Towards public policies tailored to the specific local features...

Priority must be given to controlling demand

The urbanisation processes observed in the cities to the south and east of the Mediterranean are marked by the predominance of extensive reasoning, which trigger informal and unregulated development dynamics (Istanbul, Tangier...) Although it is notoriously difficult to measure, the economic, social and environmental impact of this generalised urban sprawl is immense: uncoupling of home and work, land consumption, loss of economic attractiveness, increased dependency on fossil fuels.

Although it was not possible to fully address all of these aspects in the studies presented, it nevertheless emerges that across the board public transport provision and even the major urban networks are unable to keep pace with the growth in demand for mobility in cities witnessing such rates of growth. The case of Cairo with its extreme density provides a good illustration of the fact that promoting increased urban density is not enough to hope to tackle the interactions between travel and urbanisation. Public policies towards controlling urban sprawl and promoting urban renewal should be seen as a priority for public action, ahead of offer-based approaches.

An integrated town planning/ travel approach, a « reticular metropolisation » approach or the provision of public transport should be preferred to extensive development processes, where urbanisation should be structured through densification confined to the main travel routes.

Towards a multi-modal approach for the public transport networks

In most of the cities studied there is a clear lack of coordination between the various urban transport networks, whether this be in terms of the mode of transport, fares, timetables or transit areas (location of stops, kitting out of stations or transfer hubs).

With the exception of the informal systems, which are particularly reactive to user demand with, for example, the emergence of informal and spontaneous transfer hubs in Cairo, the institutional operators' own operational reasoning would appear to be clearly favoured to the detriment of user mobility. When projects are rolled out or sectoral policies drafted, all too often the public authorities still give priority to a specific mode of mass transport (metro, tram or road...) without paying adequate attention to the issue of integrating the various modes of transport which already exist.

The setting up of a multi-modal network at conurbation level, single or multiple but coordinated by a sole authority, where each mode would be fully integrated on the strength of its own comparative advantages, should be one of the leading objectives for public urban transport policy.

Reducing car dependency

Rather than promoting the « car-free city », the point is to develop a pragmatic approach aimed at the selective regulation of car use. According to the situations observed, incentives such as developing public transport provision, renewing the car fleet, adjusting the road network and coercive measures such as implementing public transport routes with their own exclusive lanes, dissuasive parking policies or even the introduction of traffic restriction policies in the densest areas (pedestrianisation, ecological urban tolls...) can all be combined.

Financing the compact city

Despite its long and ancient architectural and urban culture, the desire to invest in shaping the city, its urban services and collective amenities is still limited in modern-day Mediterranean cities.

Against a backdrop of limited local authority means, new resources dedicated to collective transport can be factored in during the design phase of projects—turning land linked to new transport networks to financial use, for example, or advertising resources linked to urban amenities...

However, it is difficult to mobilise these new resources to finance collective urban amenities which are not related to any major infrastructure.

Such is the case for most of the urban neighbourhood public amenities (public toilets, lighting and street furniture), more generally for public area amenities (green areas, public gardens for children...) and more specifically for integrating constructed elements into public areas to encourage more sustainable urban mobility, such as bus stops, pedestrian walkways, parking, cycle paths, exclusive lanes...

Placing the user at the heart of project design and public policy

With the exception of Istanbul, in the virtually ubiquitous absence of fare integration mechanisms, the administrative limits of the local institutions or the operating perimeters of operators in the field all too often hamper peoples' daily travel.

A supply policy which focuses too exclusively on the operational constraints of the various networks cannot satisfactorily meet the public's requirements. Good public policy practices towards the development of public transport (Lyon, Barcelona) are marked by a clear concern on the part of the authorities and transport operators for the user.

In the cities to the south and east, these so-called «client-oriented» approaches should apply to road safety issues, pedestrian access but also services to employment centres

In Istanbul, the gradual integration of the various urban transport modes and networks...

The various modes of urban transport operating in the metropolis are still not adequately integrated, both in terms of fares and of spatial interfaces. Whilst some effective link-up points do exist between different modes of transport, these would appear to have sprung up spontaneously rather than through the will or action of the public authorities. But these informal transfer hubs do not have suitable mechanisms for parking, pedestrian areas or even sign-posting. Moreover, the type of service provided as well as the operating perimeters of the public and private operators are still all very separate and poorly connected between themselves—the institutional modes are deployed in the centre, whereas the private ones tend to operate on the outskirts. However, with the roll-out of some recent railway projects, it would appear that the metropolitan municipality is attempting to set up the first inter-modal platforms as the first step towards a viable alternative to the private car. As far as fares are concerned, a single fare was recently established with a monthly subscription price of 85YTL (about 50 €) which allows unlimited travel on boats, buses and the metro—the « Mavikart ».

Informal transfer hub in Istanbul



...with the introduction of pro-active traffic management measures

The Istanbul Metropolitan Municipality (IMM) is starting to implement a certain number of measures towards policies aimed at intelligent traffic management, such as the introduction of urban tolls and the electronic monitoring of traffic flows. Since early 2006, the city has been working on the introduction of an integrated traffic management charging system designed according to the congestion charging models in Singapore and London. Thus, as of 2013, Istanbul will be split up into three main traffic zones with different tariffs. However, although these efforts should be viewed in a positive light, in the short term the introduction of these binding measures on car traffic in the city centre where there are currently very few viable public transport alternatives could well lead to an increase in transport costs for the poorest households and thus cause genuine urban discrimination...

Towards the full integration of informal systems

Generally affordable for a simple trip but expensive when connections with other networks are involved (lack of integrated fares) and not particularly comfortable (dilapidated fleets) informal provision nonetheless provides a good level of user service due to its ability to adapt dynamically to demand.

Taking up little space in local authority network planning and project design deliberations, informal transport nonetheless plays a key role as a feeder for the mass institutional forms of transport and should be seen as an integral part of global provision in the Mediterranean cities.

If the modern supply management tools which exist to the north were taken on board it would be possible to optimise this mode of public transport without losing its benefits.

In the cities on the northern bank, the recent development of public transport systems on request (car pooling and small peri-urban collectives) reflects the diversification of demand linked to urban sprawl and lifestyle changes (size of families and ageing population). They operate in a very similar way to the informal forms of transport in the cities to the south and east of the Mediterranean.

Moreover, with the development of new technologies relating to non-fossil fuels, electric and hybrid cars, the automobile sector has started to undergo far-reaching technological change. This should prompt a re-examination of the relevance of the various modes of urban transport used.

As might be suggested by the examples of Cairo with the replacement of the taxi fleet by vehicles running on Towngas, or Israel with the experimental development of a fleet of electric cars, the informal sector, confined to a given area, could provide a real opportunity for circulating these new green technologies.

These now unavoidable changes will most probably drive a change in the classical form of modal split and speak in favour of the rehabilitation of informal systems in the eyes of the local authorities in the cities to the south and east of the Mediterranean.

Local decision-taker awareness still needing to be raised

Whilst combating global warming has already drawn the attention of public decision makers to the importance of curbing GHG emissions, there is still only limited awareness to the south and east of the public health stakes relating to air quality and more specifically to fine particle concentrations.

Besides the systemic approaches which need to be adopted, the resulting economic impact must be better assessed to ensure that greater account is taken of issues relating to urban mobility in public policy and project design.

A precise estimate of the economic impact of imported fossil fuels for cars or the cost of non-action in the face of non-sustainable dynamics (urban sprawl, mass motorisation and the deterioration of air quality) can play a determining role in public decision taking.

New tools for new challenges

Certain innovatory monitoring and observation mechanisms have already been introduced in some cities on the northern shores, such as Marseilles and Nice for air quality, but a far-reaching overhaul of the methodological approaches needs to be carried out in order to assess the socio-environmental impact of urban transport on the public and to fully integrate these concerns into urban planning exercises.

Certain less common data elements should be available for the assessment of specific impacts, as is the case for data on average travel speeds, which is essential to the assessment of GHG emissions.

Consolidating the capacity of local urban expertise

The development of specifically Mediterranean expertise in research, higher education or continuous training is a pre-condition for the implementation of effective local initiatives and solutions adapted to the local context. This could lead, for example, to the creation of technical institutions dedicated to the Mediterranean city, and more specifically for urban transport, along the lines of what already exists in certain states to the north. Furthering cooperation in the Mediterranean should help provide an active contribution thereto.

In Marseilles and Nice, the monitoring and assessment of local pollution is tending towards operational mechanisms to assist in decision taking...

France has an air quality monitoring mechanism based on a network of 35 French associations approved by the Ministry for the environment. In the Provence Alpes Côte d'Azur region, ATMO PACA is a partnership-based structure (State, municipalities, industry, consumer and environmental protection associations and qualified individuals) which monitors, provides information and aids decision taking. Since 2006, the work which it has conducted in several cities in the region has led to the shaping of a new innovatory approach aimed at ensuring better adapted monitoring in the field, linked to the needs of local players.

Air pollution mapping in Marseilles

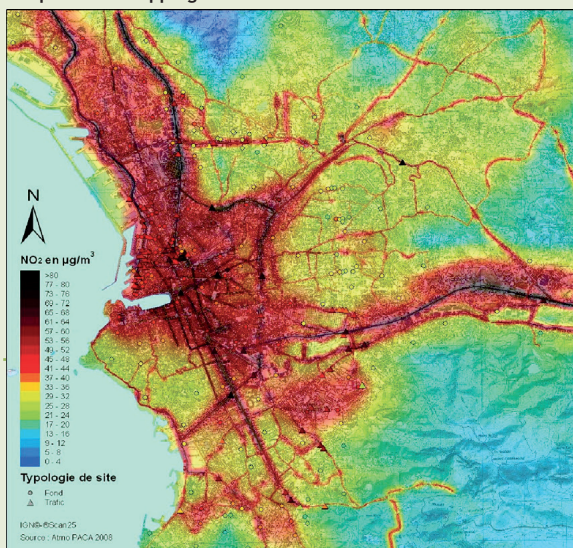


Illustration ATMO PACA

Following a first stage of enhanced exchange with the various technical and decision-taking players for the different issues involved (environment, health, planning, travel, energy, academic life...) in order to share recognition of the need for concerted action, a more specific diagnosis of the area must now be established. This will be done on the basis of a precise inventory of air pollutant emissions (including the main greenhouse gases), an intensive measuring campaign and the introduction of an urban model.

Finally, through emission mapping, a sectoral analysis of the respective contributions and high resolution concentration mapping should lead to the construction of a prospective tool (digital model) based on the implementation of air quality change scenarios based on the hypotheses of the local partners: pedestrianisation of certain areas, changes to the private vehicle/public transport split either locally or at city level, reduction of speed and access in certain sectors.

Besides its technical aspects, the de-partitioning of jobs and the grass-roots inclusion of ideas about area development has meant greater account being taken of air quality in these cities.

Conclusions et recommendations

Knowledge, Concept and Coordination for the Mediterranean cities

Given the major challenges which the Mediterranean cities will be called upon to face, on demographic issues as well as adapting to climate change, priority must now be given to an integrated and systemic approach to urban development:

- Thought out according to usage rather than systems;
- Linking the diversification of transport provision to controlling demand for mobility;
- Determined to genuinely establish control over growth and development dynamics.

To this end, three key ideas relating to urban travel must be given priority by public Mediterranean decision-takers.

Enhancing knowledge and instruments for monitoring urban dynamics...

In order to take account of the new scale of Mediterranean cities, which feature vast heterogenic, inter-dependent urban areas run by a whole range of administrative bodies.

By developing monitoring and assessment tools dedicated to the basic indicators of urban mobility (travel, reasons, distance, time, cost...) but also to other economic, social and environmental factors in order to assess the sustainability of urban development (network congestion, urban attractiveness, local accessibility, impact on public health, energy dependency...)

By consolidating local technical expertise, particularly by boosting human and financial means, developing research programmes, rendering professional careers more attractive, blending professional cultures and developing regional cooperation.

Renewing urban models and concepts ...

Towards pragmatic approaches adapted to specific local features, a far cry from the straightforward transposition of standardised urban products.

Towards urban models less dependent on roads and cars in which town planning and public transport networks are intimately linked within a reticular metropolisation-based approach.

Towards urban amenities structured around rehabilitated public areas, likely to be instrumental in improving the quality of life in dense urban areas, allowing better road sharing in favour of soft modes and integrating essential inter-modal centres.

Towards the full integration of informal transport within global public transport provision, in order to optimise existing resources.

Towards usage rather than supply-based approaches, and taking account of the inhabitant and user.

Improving coordination between local players in urban development...

Through the “territorialisation” of public policy, aimed at encouraging approaches which are systematic and integrated rather than sectoral.

Towards effective strategic planning, based on anticipatory real estate policies and by limiting dispensatory mechanisms.

Finally and more generally speaking, the emergence of urban contracting authorities with the competence, own resources and capacity to arbitrate over local players is one of the conditions for the successful implementation of more sustainable urban policies.

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