Report on urban health and sustainable urban mobility in the Mediterranean

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Introduction

Urban health has become a very important topic for policy-makers at local and regional level in order to improve the quality of life of people living in cities. Like the majority of the world, the Mediterranean region is facing other challenges linked to its highly concentrated population living in cities, and due to the fact that it has one the fastest urbanisation rates in the world.

In addition, Mediterranean cities tend to be characterised by narrow spatial models owning to their historical urban fabrics, which may be viewed as a factor in making it more difficult to create a healthy urban environment.

In this context, the urban mobility sector is viewed as having a strong impact on the quality of life of people living in cities, and thus when it comes to promoting (or discouraging) health in urban areas. For this reason, policy-makers are focusing on promoting sustainable mobility measures, as these should lead to improvements in the main drivers of urban health, including:

- air quality and noise pollution, linked to the number and type of vehicle in the urban network;
- the safety of urban citizens, linked to the number of accidents involving both drivers and pedestrians;
- healthier lifestyles, linked to the promotion of non-motorised modes of transport;
- inclusion, linked to the potential of collective transport modes to improve accessibility for people who cannot afford to own their own vehicles;
- stress levels, often related to traffic congestion and lack of parking space.

Two case studies (the capital cities Rabat and Tunis) showcased the attempt of two southern Mediterranean capitals to promote and implement sustainable mobility policies aimed, among other things, at improving urban health and their citizens' overall quality of life.

Generally speaking, the experiences of both cases are characterised by a virtuous trend towards the adoption of broad strategies, such as the Sustainable Urban Mobility Plan (SUMP) and the Tunis City Strategy (SDVT), addressing the key challenges of sustainable mobility.

This is considered a key point to highlight, as strategic planning makes it possible to align transport objectives with sustainability objectives that ultimately reflect an improvement in urban health, such as reduced greenhouse gas emissions, improved air quality and the promotion of active modes of transport such as walking and cycling. At the same time, it should include various policies and measures (e.g.: land use planning, public transport and active transport infrastructure) ensuring a combined contribution to achieving the objectives set. Strategic planning should also set measurable objectives and benchmarks that make it possible to monitor and assess progress over time, while at the same time building consensus and supporting policy initiatives through stakeholder engagement. Finally, it should enable the available resources to be efficiently allocated.

As such, the SUMP is a powerful new approach to sustainable mobility and, compared to traditional planning, it should pay greater attention to stakeholder engagement, cross-sectoral policy coordination

and cooperation with private parties, all of which should lead to the development of more effective policy.

Even if the initiatives described in the appendix are expected to have a positive impact, neither city seems to have a sustainable mobility policy that is integrated into a broader urban health strategy. Being integrated in this way would certainly enable the establishment of more effective sustainable mobility measures, in terms of the expected benefits for citizens' health, by more clearly identifying the needs and objectives to be achieved.

General policy recommendations

With regard to the overall situation, Europe has increasingly invested in sustainable mobility policies and measures in recent years. In addition to the development of the Sustainable Urban Mobility Plan (SUMP) approach, the following measures can be mentioned as positive examples to be rolled out at Mediterranean level:

- public transport: European cities have developed extensive public transport systems, including light rail, buses and metros, in order to provide sustainable and efficient transport options. Many cities, such as Stockholm and Zurich, have integrated their public transport systems with active modes of transport, in order to provide transparent and sustainable mobility options;
- active transport infrastructure: European cities have invested heavily in active transport infrastructure, such as cycle paths, pedestrian streets and bike-sharing programmes, in order to promote sustainable mobility and improve public health. For example, Amsterdam is known for its extensive network of cycling lanes and streets;
- low-emission zones (LEZs): several European cities, including London, Barcelona and Berlin, have introduced LEZs, which restrict access to highly polluting vehicles in certain areas. LEZs have been shown to improve air quality, reduce congestion and favour active modes of transport;
- car-free zones: many European cities, including Oslo, Madrid and Brussels, have introduced car-free areas in city centres in order to reduce road congestion and promote active modes of transport. These areas are usually pedestrianised and may include cycling and public transport infrastructure in order to facilitate sustainable mobility.

Building on the experience of the two case studies, as well as on wider European practice, some key recommendations can be made to national and local/regional authorities in the Mediterranean region for the development of urban health policies, including through sustainable urban mobility measures.

AT NATIONAL LEVEL:

- sustainable mobility policies should be integrated into general urban health policies, in order to set priorities, objectives and targets for intervention more effectively;
- the development of urban health policies should be supported by adequate financial resources and efforts to boost general awareness among the urban population of their importance;

- urban health policies, and in particular sustainable mobility measures, should be monitored on an ongoing basis in order to verify that the objectives have been met and whether it is necessary to reformulate them;
- mass public transport should continue to have sufficient resources to enable it to maintain its role as the backbone of the mobility system;
- the legal symmetry between urban planning and sustainable and sustainable urban mobility plans should be adapted;
- links should be created between transport policy and public health policy in order to take into account long-term impacts;
- state institutions need to support transport policies and subsidies that reduce greenhouse gas emissions from transport as well as air pollutants and noise;
- including basic knowledge on the link between transport and health policies when training health professionals;
- establishing legal and financial frameworks that enable local authorities to promote sustainable and health-friendly transport;
- authorities regulating urban traffic should be set up in the first phase in large urban agglomerations.

AT THE LEVEL OF CITIES AND REGIONS:

- sustainable mobility policies should be developed as part of sustainable urban mobility plans, in accordance with national guidelines, as well as with best practices at European level, preserving the specificities of the local context;
- tie local spatial planning to transport planning. In this connection, some ways of designing and developing the territory are more favourable to public transport. This will facilitate the establishment of a more efficient, frequent and rapid public transport service. In addition, good planning paves the way for a multiplicity of travel choices, ensuring flexibility and increased accessibility for public transport users;
- the use of intermunicipal cooperation as the *modus operandi* of collective transport is strongly recommended, in order to pool resources and serve as many citizens as possible;
- particular attention should be paid to putting in place sufficient human and financial resources to monitor the achievement of the objectives set – to this end, key performance indicators should be clearly established during the strategic planning phase;
- education and awareness-raising activities should be carried out among members of the public in order to promote a shift in habits towards more sustainable behaviour;
- in this regard, a participatory approach should always be ensured when developing sustainable mobility measures aimed at improving urban health, as this should facilitate the transition from planning to tangible action;
- in order to help implement plans, it is essential to ensure a stable commitment in financial and political terms, and to determine clear responsibilities within the implementing institutions.

AS REGARDS THE SPECIFIC MEASURES THAT CAN BE IMPLEMENTED:

- in urban areas, particular attention should be paid to reducing motorised transport activities (the "avoid" dimension within the "Avoid-Shift-Improve" paradigm);

- the development of electric mobility (shared or individual) should be supported, even if this is part of the many measures aimed at boosting the sustainability of transport, starting with the reduction of "unnecessary" motorised journeys;
- micromobility (shared or individual) should be seen as an effective way of solving the "first and last mile" problem in urban areas and to increase the attractiveness of public transport;
- adequate safety conditions should be ensured in order to promote active modes of transport (cycling and walking). This concerns both the infrastructure and the behaviour of other road users;
- it would be desirable to introduce a dissuasive pricing policy in order to encourage motorists to opt for public transport.

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ANNEX

CASE STUDIES

(a) RABAT

The capital city of Rabat has a population of about 580 000 inhabitants, which reaches over 2 million in the metropolitan area.

Rabat faces, as other large Moroccan cities, negative effects of mobility affecting citizens' health and wellbeing, such as air pollution, traffic congestion, accidents and noise. This condition is driven by constant urban growth and increasing sprawl, accompanied by an increase in car ownership and car journeys. The vehicle fleet is growing by 5% per year in Morocco, with half of this fleet being registered in the region of Rabat and Casablanca.

On the other hand, public transport, with some exceptions, is not perceived as a competitive and appealing mode of transport, and is therefore perceived as not responding to citizens' needs, in particular those of the most economically and socially vulnerable; this translates into a low modal share.

Nevertheless, thanks to the integrated development programme *Rabat City of Light, Moroccan Capital of Culture*, launched in 2014 and implemented by the company Rabat Région Aménagement, the city has positioned itself among the major global metropolitan cities through structural projects for the valorisation of heritage, the preservation of green spaces and the environment, the improvement of access to local services and facilities, and the promotion of governance, which have allowed the city to upgrade its infrastructure and transport equipment, and to consolidate and modernise its road infrastructure."

In 2021 the urban mobility programme in Rabat continued to gain in substance with projects to decongest traffic between the two banks of the river and at the level of Greater Rabat, in line with the logic followed for some time in terms of fluidising urban movements and securing traffic, with a view to curbing demographic pressure and the explosion of the car fleet, two factors that will continue to increase in the future.

Methodical work has been deployed in recent years with the modernisation and renovation of the bridges connecting the two parts of the Bouregreg, the entry into service in 2018 of a second Rabat-Salé urban ring road covering 8 kilometres and, most recently, the construction of an underpass in the city centre and a tunnel at the southern entrance of the capital. In this context, this integrated programme has prioritised the environment and sustainability, and to this end a great deal of attention has been paid to the green spaces of the city. Thus, Rabat has transformed in recent years into a real open-air construction site and has experienced a real green revolution and profound changes in infrastructure and urban planning.

With a green belt of 1 063 ha, the city can now boast of offering its inhabitants twice the global average of green space for each individual, in light of the World Health Organisation standard set at 10 square meters per person.

The Moroccan capital is developing as a living ecosystem and has 230 hectares of green areas, several of which are linked to the cultural heritage and historical heritage of the city.

The Roadmap for Sustainable Mobility in Morocco, developed in 2017 under the supervision of the Ministry of Equipment, Transport, Logistics and Water, aims to develop a shared vision of mobility for people and goods that provides access to economic and social opportunities, is affordable, efficient and energy-efficient, with low emissions and respectful of the environment and the population.

The roadmap emphasises the need for action in the urban environment and provides a reference for present and future policies and interventions by cities. For example, the roadmap underlines the importance of systematising, accelerating and synchronising the development of multimodal, low-emission Urban Travel Plans. The Sustainable Urban Mobility Plan (PMUD) being developed in the city of Rabat, presented further on, responds to this need.

The roadmap is also intended to be a participatory process that brings together all different mobility stakeholders – public, private and from different sectors (transport, energy, urban administration, etc.).

The roadmap targets a 2050 long-term vision to steer public and private decisions towards sustainable mobility and is composed of the following axes:

- Synergistic urban transformation – development of attractive cities by integrating urban planning and mobility; strengthening public transport, soft modes, shared mobility and multimodality; reducing emissions and increasing the electrification of urban transport;
- Low carbon energy – co-development of energy and mobility strategies and policies; development of an electric mobility ecosystem; promoting the adoption of the electric mobility ecosystem;
- Optimising the efficiency of modes and systems;
- Defragmenting and shortening supply chains – development of integrated industrial zones;
- Reducing unnecessary journeys – reducing displacements to improve productivity and quality of life;
- Solutions for the rural world – enhancing the role of mobility of people and goods in the rural world as a lever for development policies;
- Construction and adaptation of infrastructure – increasing transport infrastructure's resilience to natural hazards;

- Regulatory and financial tools – creating suitable conditions to support sustainable and fair mobility;
- Road safety – increasing road safety as a lever for sustainable and low-carbon mobility and as a social lever.

In line with the National Roadmap, Rabat has recently put in place several measures to support sustainable mobility, although these are not part of specific urban health policy.

The city adopted the Municipal Action Plan for the period 2018-2023, which includes a strategic axis devoted to urban mobility, namely Axis No 3: *Rabat as a balanced and modern urban mobility space*. The latter aims to:

- Improve the quality of urban transport and ensure the link between transport modes;
- Improve the quality of street furniture;
- Improve signage and make urban mobility safer;

Rabat has also invested in a modern tramway system, operated by the company Rabat-Salé Tramway (STRS), that connects the capital with the nearby city of Salé, connecting several important locations in both cities. The length of the tram network is approximately 19.5 kilometres (with 31 stations) and is served by a fleet of modern, air-conditioned vehicles operating on a regular schedule throughout the day. The system helps to reduce traffic congestion and improve air quality in the city. According to ALSTOM company, over 10% of residents within the tramway's perimeter of influence in Rabat use it to go to work or school, while in Salé it is used for work and education-related trips by 25% and 33% of inhabitants respectively in the served areas. Finally, the tramway seems to be a competitive alternative to the car, considering that about 49% of tram users in Rabat also have their own vehicle.

It should be noted that in 2022, the tram transported about 150 000 passengers per day, with a flow characterised mainly by daily and recurring home-work and home-study trips. In addition, by joining both shores, the tram strengthened social cohesion between the inhabitants of Salé and Rabat.

As concerns pedestrians, in some parts of the city pedestrianisation measures have been implemented in order to exclude motorised traffic and create a safer and more enjoyable space.

In addition to the above, in order to address the challenges generated by population growth and the increase in the number of journeys, STRS is developing a Sustainable Urban Mobility Plan for Rabat-Salé-Skhirat-Témara (PMUD) 2021-2035. This agglomeration is the second metropolitan area of the country, with a population expected to increase by about 27% to 2040 (reaching 3 million inhabitants) and journeys up by 52% in the same period.

The PMUD should deploy a transport organisation scheme over a period of 15 years for the metropolitan area. According to the information available so far, potential lines of action could be constituted by:

- Working on the governance of inter-modality;
- Unifying the tram and bus networks;
- Building an urban cable car over the Bouregreg from Chellah;
- Professionalising the "khtafa" (informal transport), in the form of cars or three-wheelers;
- Pursuing the dynamic towards a light conurbation Rabat-Salé-Témara-Skhirat.

Furthermore, the PMUD should support the development of soft/active modes of transport such as cycling and walking.

Aware of the importance of inclusive and sustainable transport, in 2018 officials put in place a new type of cycle-taxi also began encouraging the purchase of electric vehicles by setting up a large network of electric charging stations in several axes of the city.

With regard to urban health, a health plan for 2025 has been developed and implemented since 2018 by the Ministry of Health, in a framework of consultation with stakeholders within the public health ecosystem and based on three pillars divided into 25 axes and 125 measures.

The first pillar relates to the organisation and development of the provision of care with the aim of improving access to health services. The second pillar is dedicated to strengthening national health and disease control programmes. Finally, the last pillar concerns the development of governance of the health sector and the rationalisation of the use of resources.

It also highlighted the main advances made by the sector, supported by significant figures and indices, particularly in terms of the control and management of chronic diseases, the increase in the number of beds in hospitals and the improvement of access to services provided by public hospitals.

(b) TUNIS

The Tunisian Ministry of Health, in cooperation with the WHO, has developed from 2012 onwards national health programmes which, although not referring specifically to transport policies, nevertheless focus on issues that can also be improved through sustainable urban mobility measures.

In particular, these programmes define the following objectives:

- Improving access to healthcare services and their quality, particularly for underserved populations;

- Promoting healthy lifestyles through public health campaigns that encourage physical activity, healthy eating, and smoking cessation;
- Enhancing environmental health, including reducing air pollution and ensuring access to safe drinking water;
- Strengthening disease surveillance and response to detect and respond to outbreaks of infectious diseases;
- Improving health infrastructure including hospitals, clinics, and health centres, to improve the delivery of healthcare services.

In this respect, more sustainable mobility systems can contribute from different angles, such as:

- Reducing air pollution caused by vehicle emissions;
- Promoting active transportation (cycling and walking) and related physical activity, thus preventing chronic diseases such as obesity and heart diseases;
- Improving road safety for all road users and reduction of the related human costs;
- Increasing access to healthcare for vulnerable categories of the population who may not have access to private vehicles;
- Promoting social inclusion by providing affordable and accessible options for people who may not be able to afford private vehicles.

The above-mentioned objectives defined by national health programmes should therefore inform the development of regional and local sustainable mobility policies aimed at improving health conditions in urban areas.

In this context, the city of Tunis has developed some interesting measures that, despite not being directly linked to the wider scheme presented above, still serve as a valuable example to be presented.

The capital city of Tunis has about 1 million inhabitants and a territory of about 104 sq. km. Its metropolitan area (2 668 sq. km), i.e. Greater Tunis, encompasses four governorates, namely Tunis, Ariana, Ben Arous and Manouba, accounting for more than 23% of the national population.

Like many other cities in the Mediterranean area, Tunis faces mobility issues such as traffic congestion, air pollution and limited access to public transportation. These issues have a direct impact on air quality: according to the World Health Organisation (WHO), the annual average concentration of PM2.5 (fine particulate matter that can penetrate the respiratory tract) in Tunis is around 29 micrograms per cubic metre, which by far exceeds the WHO air quality guideline of 10 micrograms per cubic metre.

To address these mobility challenges, in recent years Tunis has implemented several initiatives that contribute to a more sustainable mobility system. One of the most significant ones is the expansion of the Tunis Light Metro system, also known as the Tunis metro, which is a modern, high-capacity rail network that serves the city and its suburbs. The Tunis Light Metro system is designed to provide fast, reliable and affordable transportation for residents and visitors, while also reducing traffic congestion and air pollution.

Tunis has also been investing in cycling infrastructure. In particular, in 2019 the Tunisian government announced a plan to develop 1 000 km of cycle paths across the country by 2021, including in the capital city. However, at the moment the network of cycle paths in Tunis is still rather limited, with an extension of around 8 km. Bike racks were also installed in public areas of Tunis and several public bike-sharing schemes launched.

The city has also encouraged the use of electric vehicles by installing charging stations in various locations across the territory.

Tunis has also prioritised pedestrian-friendly infrastructure by implementing walkways, bridges and pedestrian crossings, in order to increase the overall safety conditions of pedestrians, which constitute a vulnerable road user category. Car-pooling initiatives have also been launched to encourage residents to share journeys, thereby reducing the number of cars on the road and the associated emissions.

Current and future sustainable mobility investments in Tunis are framed within the National Policy of Urban Mobility (*Politique Nationale de Mobilité Urbaine* – PNMU). The PNMU aims to find solutions to constraints in urban areas such as deteriorating infrastructure, continuous traffic congestion, insufficient public transport coverage and low levels of user safety. The Tunisian PNMU includes the development of an action plan for the period 2019-2025 oriented around the achievement of seven strategic objectives:

- Develop a more low-carbon urban mobility;
- Improving urban accessibility for all;
- Improve road safety in urban areas;
- Support the ongoing decentralisation in the urban mobility sector through creation of local administrative entities;
- Strengthen and sustain financing for sustainable urban mobility;
- Strengthen capacities and governance tools in the field of urban mobility;
- Clean up, reform and improve public transport.

As part of the implementation of the PNMU, Tunisia is counting on the establishment of a metropolitan authority to regulate urban mobility in the Greater Tunis area.

In addition to the above, the project *A'SIMA Tunis: Strategic planning and multilevel governance for a resilient metropolitan city (2020-2024)*, funded by the European Commission, aims to promote integrated urban development while contributing to several Sustainable Development Goals, in particular SDG No 11 (sustainable cities). This project also marked the beginning of the City of Tunis Strategy (SdVT), an under development strategic plan that, through a wide stakeholder engagement, focuses on environment protection and citizens' well-being, including the sustainable management of mobility. In particular, according to the document defining the strategic framework (released in November 2022), actions should be focused on:

- Organisation of metropolitan transport and mobility meetings addressing several aspects such as: passenger transport/collective transport, urban logistics, parking; soft mobility, inter-modality, articulation with urban functions, dependence on mobility, comfort, cost, carbon footprint;
- A metropolitan programme for the promotion of soft mobility;
- Peripheral metropolitan mobility corridors;
- A sustainable mobility project in the central axis.