





**FINAL REPORT** 

# Policies for Sustainable Accessibility and Mobility in Urban Areas of Mali

April 2020

An international partnership supported by:

















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# Acronyms and abbreviations

ADR Agences de Développement Régional

AGEROUTE Agence d'Exécution de l'Entretien des Routes
ANASER Agence Nationale pour la Sécurité Routière

**AOMU/ AOTU** Autorité Organisatrice de la Mobilité Urbaine/des Transports Urbains

AR-FER Autorité Routière-Fonds d'Entretien des Routes

ASCOMA Association des Consommateurs du Mali

CADD Cellule d'Appui à la Décentralisation et à la Déconcentration

CPAU

COOrd. Nat. – Synd. et Assoc. des Chauff. et Conducteurs Routiers du Mali

CPAU

Cellule de Préfiguration de l'Agence d'Urb. de la Métropole de Bamako

CREDD

Cadre stratégique pour la Relance Economique et le Développement

Durable

**DNFPCT** Direction Nationale de la Fonction Publique des Collectivités Territoriales

**DNR** Direction Nationale des Routes

**DNTTMF** Direction Nationale des Transports Terrestres, Maritimes et Fluviaux **DRCTU** Direction de la Régulation de la Circulation et des Transports Urbains

**DRTTF** Direction Régionale des Transports Terrestres et Fluviaux

**EASI** Enable, Avoid, Shift and Improve

**FDMU** Fonds national de Développement de la Mobilité Urbaine

**FNMU** Forum National sur la Mobilité Urbaine **GTMU** Groupe de Travail sur la Mobilité Urbaine

**INSTAT** Institut National de la Statistique

MATD Ministère de l'Administration Territoriale et de la Décentralisation

**MEADD** Ministère de l'Environ. de l'Assainissement et du Développement Durable

MHULS Ministère de l'Habitat, de l'Urbanisme et du Logement social

MIE Ministère des Infrastructures et de l'Equipement

MSPC Ministère de la Sécurité et de la Protection Civile

MTMU Ministère des Transports et de la Mobilité Urbaine

OCB Organisations Communautaires de BaseODD Objectif du Développement DurablePNMU Politique Nationale de Mobilité Urbaine

**PNTITD** Politique Nationale des Transports, des Infrastructures de Transport et du

Désenclavement

PUS Plan d'Urbanisme Sectoriel

**REDECOMA** Regroupement pour la Défense des Consommateurs du Mali.

**RUR** Redevance d'Usage Routier

**SAEIV** Systèmes d'Aide à l'Exploitation et à l'Information-Voyageurs

**SDU** Schéma Directeur d'Urbanisme

**SMIB** Syndicat Mixte Intercollectivités de Bamako (Grand Bamako)

**SNAT** Schéma National d'Aménagement du Territoire

**SNTP** Section Nationale des Transports Privés

SYNTRUISyndicat des Transporteurs Urbains et InterurbainsTCHNSTransports en Commun à Haut Niveau de Service

**TOD** Transit Oriented Development

VT Versement Transport

# Introduction

Urban transport and mobility form one of the pillars of the Africa Transport Policy Program (SSATP), whose objective is to provide African decision-makers with the tools to develop affordable, safe and sustainable urban transport in Africa for primary and secondary cities. This fits into Sustainable Development Goal No. 11: "Make cities and human settlements inclusive, safe, resilient and sustainable." The expected outcome of this pillar is to provide secure, universal access to sustainable transport for urban populations.

To achieve this, the SSATP has launched a program to craft a set of policies designed to improve accessibility and mobility in urban areas of Africa, based on an empirical study in a representative sample of cities in the region.

That study led to the publication of Working Document No. 106 entitled "Policies for sustainable mobility and accessibility in urban areas of Africa." This paper describes an approach called the "EASI conceptual framework," which comprises a set of specific policy actions grouped in four categories: Enable, Avoid, Shift, Improve. The paper proposes specific measures that could be adopted by African cities in each of these categories.

As a follow-up to this publication, an additional work program was established to implement these guidelines: firstly, in eight countries in 2018, then in four program-member countries in 2019. The goal is to foster the emergence of a political vision for urban mobility and transport.

The present study aims to prompt a change in thinking about accessibility and mobility, and to raise awareness among decision-makers so that they will implement strong policies, strategies and operational practices that make an effective contribution to improving transport and mobility in urban areas of Africa.

With this in mind, the present final report contains:

a **policy letter on urban mobility for Mali** highlighting the context, objectives, ambitions and the orientations for achieving them;

the urban mobility strategy per the four categories of the EASI concept;

action plans at national scale, for Greater Bamako<sup>2</sup> and for the secondary cities.

This report is based on the **recommendations** formulated in the **assessment report on urban mobility in Mali** drawn up following the first missions to Bamako and Kayes in July-September 2019. These recommendations were finalized following the **National Urban Mobility Forum** held in Bamako on November 6-7, 2019, which provided the opportunity to present a preliminary version.

Stucki M. (2015), Policies for sustainable mobility and accessibility in urban areas of Africa, SSATP Working Paper No. 106, available online: <a href="https://www.ssatp.org/sites/ssatp/files/publications/SSATPWP106-Urban%20Mobility\_IO.pdf">https://www.ssatp.org/sites/ssatp/files/publications/SSATPWP106-Urban%20Mobility\_IO.pdf</a>

<sup>&</sup>lt;sup>2</sup> Greater Bamako is a metropolitan area that extends beyond Bamako District. It aspires to steer the strategic planning project for "Greater Bamako 2030." In administrative terms, it equates to the SMIB of Bamako, which since June 27, 2019 has comprised 25 local authorities (the six municipalities plus the council of Bamako District and the 18 neighboring municipalities in the Koulikoro Circle).

# Policy Letter

# 1.1 Background

Mali has been experiencing very rapid population growth, of over 3% per year, a trend even more prominent in urban areas, where annual growth has been approximately 4.9%. By 2030, the population of Bamako is expected to reach 4.6 million, up from 2.3 million in 2017<sup>3</sup>, while the country's other cities will see even stronger growth (Gao, Kayes and Timbuktu should have growth rates of more than 7% per year). Many cities will see their population double, or even triple, by 2030; Sikasso and Kayes, for example, will have populations in the millions.

Although achieving sustainable urban growth is a major priority, adequate controls are not yet in place. A passive stance will not suffice, and the public authorities need to ensure that urban development becomes an engine of economic growth. The challenges of urban mobility are central to this approach.

For the past two decades, day-to-day travel in Malian cities has tended to become motorized, with households acquiring motorized two-wheelers and with paratransit services developing in the capital and in the country's other cities. According to INSTAT, household ownership of two wheelers has risen from 17% in 2001 to 57% in 2017. Sikasso and Bamako are the cities with the highest household vehicle ownership (75% and 66%, respectively). The number of motorcycles on the road is rapidly increasing; probably over 500,000 nationwide, more than a third of which are in the capital<sup>4</sup>.

This means that motorcycles have become the dominant mode of transport in the country's urban areas. Cars are still in the minority, with 200,000 vehicles on the road (half of which are in Bamako), but car imports are on the rise. However, the cars and minibuses on the road are very old, resulting in poor air quality, which is further worsened by two-stroke engine motorcycles.

The capital experiences chronic episodes of congestion caused by the city's natural constraints, the organization of the road system and a lack of regulation. Due to urban development on the south bank, traffic must cross the Niger River, and the three bridges become bottlenecks during rush hour.

Travel conditions in urban areas have worsened significantly for most inhabitants. Much time is wasted in traffic jams, by people using both individual and collective modes of transport. Since 2005, the only public transport services available in Bamako are offered by paratransit operators. The "Sotrama" minibuses that played a predominant role a few years ago are steadily losing ground, replaced by lower-capacity vehicles (shared taxis and motorbike taxis).

In the country's other cities, taxis are being supplanted by tricycles, which have become widespread in the past few years. This new type of vehicle is popular because people want a cheaper mode of transport, but there are serious concerns regarding road safety. Motorcycles and tricycles are now the preferred modes of transport in the less densely populated outskirts of cities.

In Bamako and other major cities, urban development has tended to lengthen the distances that must be travelled to the main hubs of activity where employment, shops, schools, etc. are concentrated. The trend towards sprawl, combined with the increase in motor vehicle traffic, also significantly reduce the attractiveness of active modes, such as walking and cycling. The way in which traffic and parking are organized relegates pedestrians and cyclists to undeveloped spaces already occupied by

<sup>&</sup>lt;sup>3</sup> Source : INSTAT.

<sup>&</sup>lt;sup>4</sup> On the basis of Pochet et al. ( 2017) work, the number of two wheelers can be estimated at 177 000 vehicles in Bamako in 2017.

merchants, waste or parked cars. This endangers the most vulnerable road users: pedestrians and cyclists.

The public authorities have responded by trying to solve the problem, especially in Bamako. However, the measures implemented have not alleviated congestion on the main arterial roads with the heaviest traffic.

In this context, the objectives of the urban mobility policies need to be in line with the principles of sustainable development, which seek a balance between environmental, social and economic values.

## 1.2 Objectives

The Strategic Framework for Economic Recovery & Sustainable Development (CREDD 2019-2023) is the benchmark document of the development policies in force in Mali, based on a new long-term vision known as Mali 2040. The CREDD 2019-2023 commits the country to a five-year plan as part of a new national strategy for economic and social development.

Aligned with the Sustainable Development Goals (SDGs) and the objectives of Agenda 2063 of the African Union, the CREDD expresses this new vision of development, aiming for inclusive growth and a structural transformation of the economy. It emphasizes the importance of achieving nationwide coverage with infrastructure networks. National and regional road and rail transport corridors are recommended in order to increase commerce and reduce the cost of transactions. Maintenance of road and rural paths is needed to preserve the existing network. Improving transport conditions on the Niger River is also recommended in order to facilitate economic development in this basin of jobs and population.

To reach these goals, the central government has developed an economic infrastructure program (2019-2023) worth a total of 5.5 trillion CFA francs, aimed at bringing production closer to consumers. Part of the budget is earmarked to finance infrastructure in urban areas, designed to address day-to-day mobility issues and improve the quality of life in cities<sup>5</sup>.

Ensuring better transport of people and goods in the country's urban areas, as targeted in the National Urban Mobility Policy 2030, is closely aligned with the CREDD, which aims to "improve urban living conditions and mobility" and considers that urban development must be a source of growth and job creation. The policy complements Mali's commitments to the 2030 Agenda, which sets out the 17 Sustainable Development Goals (SDGs), and to the Paris Agreement.

If cities are driving forces of the economic growth, urban mobility is what keeps the engine of the economy running. Urban mobility is at the heart of the urban dynamic process. It affects quality of life and impacts directly the productivity of the urban economy.

#### 1.3 Ambitions

At present, the priority is to improve urban mobility management through appropriate governance encompassing all of the components and interconnections of this topic. Urban mobility is still often dealt with on a project-by-project basis, by different institutions, without a strategic and inclusive vision.

The national urban mobility policy aims to address the issue as a whole, with a multimodal approach, so that mobility and urban planning can be organized coherently (Avoid), so that the different modes can complement, rather than compete (Shift), and so that transport infrastructure allows for all types of mobility, especially the most energy-efficient ones (Improve). But first, considerable efforts must

<sup>&</sup>lt;sup>5</sup> « Objective 5.6.1 : improve quality of life and seize the opportunity to create jobs

be made to define an institutional framework and mobilize human and financial resources to meet these challenges (Enable).

The national urban mobility policy must serve as the basis for the development of an inclusive and fair urban mobility, which offers alternatives to individual motor vehicles, supports the development of active modes, optimizes transport systems and works on behaviors to reduce deaths related to daily mobility. It also aims to improve the efficiency of freight transport and make it more virtuous.

A comprehensive approach to urban mobility has begun to emerge in Greater Bamako, with the recent creation of the Working Group on Urban Mobility (GTMU) which gathers the appropriate entities of the central and local governments. Now it needs to become more powerful and go beyond the role of a think tank, so as to foster a shared, holistic foundation for action. This approach will also need to be developed in Mali's other major cities, beginning with Kayes, Sikasso, Ségou, Mopti and Timbuktu.

#### 1.4 Guidelines

Urban mobility and planning must be conceived in parallel so that the different modes of transport complement rather than compete with each other, thanks to a multimodal design, and so that infrastructure projects are built in a way that includes all modes.

In order to ensure the broadest possible vision, an inter-ministerial committee will be created. Under the authority of the prime minister, it will bring together the different ministries whose expertise can be applied to the PNMU 2030. This committee will guarantee the proper implementation of this ambitious policy, which aims to transform day-to-day travel. In particular, it will clarify the role of the different ministries in implementing the strategy.

An appropriate governance structure will be set up to deal with all aspects of mobility, through a regional approach. The objective will be to continue supporting institutional development at the metropolitan level in Bamako, with the SMIB (association of local authorities) and in the country's various cities, by dividing responsibilities between the municipalities, the inter-municipal authorities and the central government, in order to better meet the needs of inhabitants.

The PNMU 2030 must quickly empower the institutions that are tasked with carrying out the urban mobility policy. New financing mechanisms will be set up to ensure that the ministries and the National Urban Mobility Development Fund (FDMU) have the required management capabilities.

Across these urban areas, coordination will be needed between urban planning (based on revised urban master plans and local urban planning documents) and mobility planning, to prevent urban sprawl and longer travel distances. Policies will be needed to improve land use efficiency, while mobility planning will be required to develop systems of transportation suitable for current and future needs. Urban mobility planning must be consistent across different scales (urban areas, municipalities and neighborhoods) to limit dependence on individual motorized transport modes and to steer urban development towards public transport usage.

Transport services will have to be redesigned with a multimodal vision to make day-to-day travel easier. At present, the modal choice of transport users correlates very closely with their standard of living. This means that a new paradigm is needed, centered on a regional strategy and more synergy between the modes of transport.

In the capital, the PNMU will encourage the creation of a high-capacity transport system on the main arterial roads. This will need to be supplemented with restructured minibus services serving as a feeder mode. Shared taxis can also be integrated into this network strategy. To do so, they will need to be differentiated from individual taxis. As an integrated public transport network emerges, with

the possibility of a unified ticketing system, motorbike taxis<sup>6</sup> will be relevant in the areas with the least coverage and during off-peak hours.

For the secondary cities, the national policy will support the regulation of motorbike taxis to make this practice safer. It will also promote operating conditions favorable to higher-capacity public transport modes, especially in the main secondary cities such as Kayes, Sikasso, Ségou, Mopti, Timbuktu, etc. To anticipate growth, the public transport systems need to adopt a tiered structure with corridors and feeder lines which will help increase the supply of services.

Finally, in all of the urban areas, the national policy will seek to prioritize walking and to secure pedestrian routes. Accordingly, sidewalks and crossings in urban settings will need to be improved to ensure a better sharing of the public space in which all modes and users can coexist in harmony.

This optimized use of the urban road network and infrastructures, as proposed in the urban mobility policy, will make it possible to reduce investment expenditures.

Furthermore, as part of the goal to improve living conditions, the PNMU aims to decrease negative externalities thanks to stricter vehicle regulations (minibuses, passenger cars, motorcycles, tricycles and taxis).

<sup>&</sup>lt;sup>6</sup> Motorbike taxis refers to two wheelers used for taxi services.

# 2. Urban mobility strategy

Over the past few years, Mali has developed Transport Policy Papers and Declarations<sup>7</sup> and a legislative and regulatory framework to outline a vision for the sector and measures for implementation, at different scales. However, these texts do not chart a clear course for urban mobility, which requires a specific approach to meet the challenges of local development. These texts should be revised in order to better respond to the challenges of daily mobility by clarifying the responsibilities of the central government and of the local authorities for planning and implementation, within the context of decentralization that is underway.

The vision guiding the national urban mobility policy must be shared by the various ministries consolidated within an inter-ministerial committee under the authority of the prime minister. The vision of the central government should result from a rigorous analysis of the current situation and a realistic assessment of the developments that are wanted, and it must chart a common path forward for the various partners. The inter-ministerial committee should coordinate implementation of this strategy, secure the involvement of the stakeholders (such as the central government, the local authorities, the private sector, civil society and the general population), monitor the progress of the various measures implemented and resolve any failings.

This policy must be based on quantitative data. The Urban Mobility and Transport Ministry (MTMU) should set up protocols for collecting data on public transport, household vehicle ownership, mobility, air pollution, road safety, etc. This data should make it possible to respond to specific issues, but it should also serve as a basis for indicators regarding the urban mobility policy.

## 2.1 Improve the governance of urban mobility (Enable)

Urban mobility necessitates an efficient, responsible system of governance, capable of anticipating needs, steering action and managing and developing urban transport systems in an integrated manner. This means building a sound institutional foundation and setting up an appropriate legislative and regulatory framework, suitable resources and a sector-specific structure conducive to developing expertise in public and private organizations.

Establish stable funding mechanisms for urban mobility

Implementation of this strategy will require financial resources devoted to both investing in and operating urban mobility solutions.

First of all, the transport system needs to become more efficient, whether by adjusting the fares, changing the professional licensing system so that it applies not only to the vehicle, but also to the driver, and through better management of the terminal infrastructure (bus stations and terminals).

Secondly, more financial resources must be mobilized, in particular for the construction of a mass transit system in Bamako. A National Urban Mobility Development Fund (FDMU) will have to be created to finance the investment, receiving allocations from the central government and from new fiscal mechanisms. Contributions should also be obtained from the various stakeholders who will benefit from an improved transport system: from food vendors at bus stations to telecoms, insurance companies, property developers and other types of businesses. A payroll tax<sup>8</sup> would allow for the collection of these contributions.

<sup>&</sup>lt;sup>7</sup>Various documents served as references in the transport sector: i) the National Transport and Transport Infrastructure Policy (PNTIT, 2013) of which the action plan is still pending approval, ii) the Transport Sector Policy (2007), iii) the 2020 Transport Infrastructure Development Plan (2006), iv) the Policy Paper on the Development of the Rural Infrastructure Subsector (2000), v) the Declaration of General Policy in the Rural Transport Sector (1999) and vi) the Declaration of General Policy in the Transport Sector (DPGST, 1993).

<sup>&</sup>lt;sup>8</sup> Similar to the French transport tax (*Versement Transport*).

A tax based on the ownership or use of private vehicles (cars and motorcycles) should also be considered. In addition to helping finance the sector, this type of tax could also be used to influence the externalities of mobility, such as pollution, fuel consumption, dangerous driving, etc., and to incentivize the use of certain modes of transport, by linking the taxes to a vehicle's level of pollution, engine size, age, etc. Creating such a tax would require improving the tax collection system and setting up efficient means of control.

A study on the funding of transport services is crucial to identify the resources that can be mobilized from indirect beneficiaries. The study will take stock of the current situation (in terms of needs and available resources) and determine how to move forward in the medium and long term. The National Department for Land, Sea and River Transport (DNTTMF) will once more play a key role in this process.

#### Strengthen the capabilities of the sector's stakeholders

Special efforts need to be made to ensure expertise within the various institutions mobilized on the topic of urban mobility, such as the future Bamako Urban Mobility Authority, but also within the municipalities. The ministry in charge of higher education can contribute by developing ongoing training programs for civil servants working in the central and regional governments, and including urban mobility in initial training courses through local universities and international training institutes such as the African School of Architecture and Urban Planning (EAMAU), which offers an Urban Mobility Master's degree for the sub-region.

The training programs will take into account the different levels of knowledge and the diversity of profiles to meet the professional's expectations at best.

Information, education and communication activities will be undertaken to raise public's awareness of urban mobility challenges.

#### 2.2 Improve land use efficiency (Avoid)

The visions for urban planning and mobility in Mali need to converge; urban planning should significantly reduce the need for individual motorized travel and encourage the use of collective and active modes of transport.

Base the planning of urban mobility on updated urban master plans

Through the Ministry of Regional Administration and Decentralization (MATD), the central government is currently redefining a vision for urban development through a National Land Use Policy, so the rarely implemented Urban Master Plans (SDU) developed in the 2000s will be updated. This means that the planning strategies can be centered on urban mobility issues, and the future revised Urban Master Plans will feature a mobility component consistent with other strategic plans.

The National Department for Land, Sea and River Transport (DNTTMF) will be responsible for encouraging dialogue and for the effective integration of the mobility guidelines.

The revision of the Urban Master Plan of Greater Bamako will have to lay the groundwork for a vision of urban development and sustainable mobility. The 2035 Urban Mobility Plan to be developed by the Urban Mobility Authority must be compatible with the revised urban master plan. Other large cities, such as Kayes, Ségou and Sikasso, could also benefit from a mobility planning document to supplement their revised urban master plans.

Lay down planning guidelines for a sustainable city

In order to limit the chronic congestion in the capital and anticipate this trend in the country's other cities, it is crucial to curtail the growing dependence on individual modes of transport. The urban planning tools, the SNAT, the revised urban master plans and local urban planning documents, should drive the shift away from monocentric urban structures and towards an organization of local areas

based on several secondary hubs. These new hubs will need to have a high density of activities, a wide range of urban services, and mixed use (housing, jobs and businesses) conducive to short trips that can be made on foot.

On the metropolitan scale, the public transport systems will connect the center of these urban areas to the various secondary hubs, thereby simplifying medium- and long-distance travel between the area's most attractive zones. Along public transport corridors, a certain amount of density should be prioritized in order to enhance the attractiveness of the system. Transit-oriented development should also be preferred around bus stations, which should become secondary hubs within the urban space.

This urban development strategy should help channel the city's growth by rationalizing the demand for mobility. The aim is to cut the cost of road infrastructure development and reduce household spending on transport.

Develop a land use strategy using urban planning tools to curb urban sprawl

In order to ensure the success of such a transit-oriented development strategy, it is essential to adopt a strategy to optimize land use in urban areas and curb urban sprawl into peripheral areas by controlling land urbanization.

Urban forms favoring substantial density around public transport nodes and corridors and around different secondary urban nodes offers attractive opportunities for citizens and companies to set up in areas well served by transport services and avoids uncontrolled urban sprawl.

This means that cities will have to develop a parallel land use strategy aiming to maintain a green belt on the outskirts and to prevent uncontrolled urban expansion.

# 2.3 Develop a multimodal transport system and promote integration (including integrated ticketing) (Shift)

Thus far, there has been no well-planned, efficiently implemented public transport policy in Malian cities. In Bamako and in the secondary cities, this has resulted in a lack of institutional public transport services and, consequently, in a prevalence of paratransit services. Insufficient supply in terms of both quality and quantity has led to an increase in household vehicle ownership. For the past few years, the use of motorcycles, tricycles and used cars has increased considerably.

Although active modes of transport such as walking represent more than half of all trips in the country's cities including Bamako, they are underrepresented in the planning and management of the public space. Improving mobility conditions will require reorganizing the use of space to give back to pedestrians some areas currently occupied by businesses and for parking.

Modernize public transport to curb the rise of private modes

Public transport should become the backbone of urban mobility plans. In order to achieve this, the quality of the service provided must be improved in terms of frequency, comfort, travel time and pricing.

The first steps are to reorganize the existing public transport services, in parallel with the ongoing upgrading of Sotrama minibuses in Bamako within the scope of a public-private partnership under the aegis of the MTMU, and to professionalize the paratransit service operators. The initiative could be extended to the major secondary cities in the following years.

The modernization of paratransit services is a prerequisite to their integration into the restructured network of mass transit systems. This modernization of paratransit services could be financed directly and certainly in part by fare revenue, if it is combined with a traffic management program promoting public transport. Creating dedicated lanes and giving priority at intersections may improve the

economic performance of these operators and generate resources that could be used to upgrade the public transport vehicles on the road and set up a ticketing system.

In Greater Bamako, a mass transit system should be created quickly, in order to meet the need for access to the city center and to reduce traffic congestion in the capital. An intermodal transport approach must be applied right from the design phase of the system, in order to incorporate feeder services using conventional buses and minibuses, as well as river transport, connecting to the high-capacity lines.

Implement traffic and parking management strategies to ease pressure on the public space and allocate more public space to active modes

The development of collective transport systems should reduce the appeal of individual motorized modes of transport, thereby easing traffic congestion caused by these modes. However, the use of motorcycles and cars in urban areas should be regulated more effectively, in order to prevent widespread congestion.

The development and maintenance of the road networks in the various cities will have to be planned according to a functional hierarchy that is coordinated with the traffic and parking plans. Although this subject is especially important for Bamako, it must be anticipated in the country's other major cities as well. The road hierarchy must be based on national standards set by the Urban Mobility Ministry, which take into account the different modes of transport, including walking.

Currently, walking is the main mode of transport in Malian cities, but pedestrian traffic conditions require urgent improvement. Although standards such as those mentioned above call for sidewalks and secure crosswalks as part of each new infrastructure project, the existing road system also needs improvements to facilitate pedestrian movements. Pedestrian streets should also be considered for very busy neighborhoods.

At the same time as these facilities are being put in place, other measures should be taken, such as information, education and communication campaigns, in order to raise awareness about the benefits of walking for health, fuel savings, etc. In parallel with changes in regulations to encourage active modes, it will be necessary to enforce rules against parking on sidewalks, ignoring crosswalk priority, etc.

2.4 Parking management strategies should be implemented to ease pressure on the public space, especially nearby city centers, hospitals, universities, schools, markets... As regulation strategies, they should favour alternatives to the use of individual motorized vehicles through a better definition of spaces dedicated to parking and the implementation of paid parking systems in city centers. Reduce environmental impacts (Improve)

#### Improve air quality in cities

Bamako and the country's other major cities have bad air quality due to the old age of the vehicles on the road and the poor quality of the fuel used. First of all, a system needs to be set up for monitoring air quality and informing the public.

First of all, measures must be taken to improve fuel quality, specifically to reduce its sulfur content. Concurrently, in addition to renewal of the Sotrama minivan fleet, actions should be taken to incite to renew the fleet of private vehicles in circulation, Furthermore, an age limit must be imposed on imported vehicles, in order to prevent old, highly polluting vehicles from entering the country. Imports of motorized two-wheelers with two-stroke engines must be banned, and their use must also be restricted in the coming years. Finally, mass transport systems should turn as much as possible to

more efficient and less polluting technologies and fuels. To bolster these actions, the establishment of air quality measurement systems and modern centers for technical inspection of motorized vehicles is essential.

#### Adopt an ambitious national road safety strategy

The poor condition of road infrastructure, lack of respect for basic traffic regulations and higher number of vehicles on the road, particularly motorized two-wheelers, all contribute to road accidents. It is essential to reverse these phenomena and reduce the number of accidents causing injuries and fatalities by improving the planning, operation, investment and maintenance of the urban road networks as well as sidewalks often disregarded in the strategies. Moreover, the technical inspection of private motorized vehicles should be reinforced and extended to two and three-wheelers.

Since the behaviour of vehicle users is at the heart of road safety stakes, it is essential on one hand to conduct wide-ranging information, education and communication campaigns to raise awareness about road safety and on the other hand to reinforce police controls to enforce the regulation. Eventually, a database of reliable, regularly updated road accident data will thus be formed, making it possible to compare and assess the impacts of local and national policies over time. This database will rely on the systematized collection of road accident analysis reports.

# 2.5 Program to monitor implementation of the urban mobility strategy

Pillar	Strategic focus	Indicator	Goal	Horizon
	Organize the institutions to guarantee multimodal management of urban mobility	Number of meeting of the inter-ministerial committee	1 quarterly meeting	2025
		Number of civil society information session	1 meeting per year	2025
		Number of Working Group on Urban Mobility in secondary cities	6 Working Group on Urban Mobility	2025
Improve the governance of urban mobility		Number of Urban Mobility Authorities in Bamako and secondary cities	3 Urban Mobility Authorities (1 in Bamako)	2030
		Number of cities included in the database	4 cities (including Bamako)	2030
		Number of meetings between Urban Mobility Authorities and civil society	4 meetings per year	2030
		Available resources for the National Urban	63 billion CFA	2025

		Mobility Development Fund (FDMU)	82 billion CFA	2030
	Establish stable funding mechanisms for urban mobility	Percentage of vehicles over 20 years old	10% of the fleet	2030
		Percentage of vehicles over 10 years old	30% of the fleet	2030
	Strengthen the capabilities of the sector's stakeholders	Number of participants trained within the framework of an annual training program (secondary cities executives, technical agencies, civil servants)	120 participants	2025
		Number of people with a Master 2 diploma within the DNTTMF and Bamako's Urban Mobility Authority	8 people	2025
Improve land use	Insure the integration of urban mobility planning with urban master plans	Number of revised urban master plans being implemented	5 urban master plans	2025
efficiency	Lay down planning guidelines for a sustainable city	Number of sustainable urban mobility plans approved	3 Plans (including Bamako)	2030
Develop a		Percentage of Sotramas and Durunis operators who took part in the professionalisation process	80% of Sotramas 50% of Durunis	2025
multimodal transport system and promote integration (including integrated ticketing)	Modernize public transport to curb the rise of private modes	Percentage of taxi operators who took part in the professionalisation process	60%	2030
		Percentage of the Sotramas fleet renewed in Bamako	30%	2025

		Length of mass transport axis to implement in Bamako	20 km	2030
		Number of passengers using transport services on the river	1,5M pax/year	2030
		Increase in public transport modal share	+5%	2030
		Number of cities with a 100% of their road network asphalted	4 cities (including Bamako)	2030
		Number of regulated intersections in Bamako on the primary road network	250 intersections	2025
	Implement traffic and parking management strategies to ease pressure on the public space and allocate	Number of regulated intersections on the primary road network in secondary cities	50 intersections	2025
	more public space to active modes	Total length of pedestrian streets	5 km	2030
		Number of charged parking spaces in Bamako's center	10 000 parking spaces for cars  15 000 parking spaces for two-wheelers	2025
		Proportion of sulphur in fuels	15 mg/kg	2030
Reduce environmental impacts	Improve air quality in cities	Percentage of motorized vehicles using alternative energies (electricity, gas)	30%	2025
		Percentage of two- wheelers with a two- stroke engine (out of the total fleet)	10%	2030

	Number of air quality measurement stations in Bamako	5 stations	2025
Adopt an ambitious national road safety strategy	Number of road deaths in urban areas	200 people	2025

# 3. Action plan

The following action plan is organized on three different scales: (i) all cities in Mali; (ii) Greater Bamako; and (iii) the secondary cities. The actions presented at each scale thus contain two levels: (i) main recommendations on which the rest of the action plan is based (ii) recommendations focusing on precise actions (a topic or mode).

Actions at national scale: define the framework and tools for managing urban mobility

By placing urban mobility planning and management at the metropolitan scale, the strategy developed in the present policy draws heavily on the decentralization process under way.

In this context, the national actions steered by the central government will chiefly consist of implementing the national framework and the tools that authorities need in order to deploy the policy locally. These actions must therefore be carried well in advance, and as soon as possible.

The timetable for implementing the present policy must fit into the decentralization timetable. The local entities are currently being set up. Once created, they must immediately be organized to take charge of their new responsibilities.

At the national scale, the action plan must therefore be deployed in accordance with several items, to define the framework and provide all necessary instruments:

**By defining a clear governance framework**: the current priority is to clarify the local authorities' role and help them to become operational. This also presupposes coordination with central government departments to guarantee the proper functioning of a more vertical organization;

**By providing long-term financial resources**: this topic is key to ensuring that the institutional bodies work properly, that transport services and infrastructure function and are maintained, and that there is investment dedicated to urban mobility development;

**By recruiting suitable human resources**: the training of staff in charge of urban mobility must be organized at the national scale. Although decentralization partly involves a reorganization of central government departments and of local authorities, new managerial staff must be recruited to enable local deployment and ensure high-quality interactions with central government departments;

**By confirming the regulatory framework**: Mali's existing regulatory framework must be adapted in several respects. Monitoring its enforcement countrywide will require the greatest effort. It will be necessary to deploy inspection units with the power to issue sanctions, particularly in municipal police forces;

**By providing technical tools** that guide the authorities and ensure harmonized management at the territorial scale, for easier interactions with and supervision by the central government: urban planning code, public spaces charter, categorization of roads, indicators and measurements monitored by observatories, etc.

#### 3.1 Detailed action plan

The action plan contains about 62 actions, and is based on the Enable / Avoid / Shift / Improve classification of the EASI concept, with the following information:

- Action (How?): description of the action
- Scale (Where?): scale of action, i.e.
  - National: action at the national scale
  - Greater Bamako: action at the local scale, equally concerning Greater Bamako

- Secondary cities: action at the local scale, concerning the main secondary cities
- **Timeframe (When?):** time concept based on progress of the action
  - Do (short term): actions are ready for kick-off, and can be carried out in the short term
  - Study then Do (mid-term): actions require additional studies, which must be conducted as quickly as possible so that the mid-term action can be carried out
  - Anticipate (long-term): actions concern planning, which must be carried out quickly in order to prepare the territory with respect to a long-term vision
- **Steering (Who?):** entity in charge of steering the action
- Partner (With whom?): entity to involve in the action's planning and implementation

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Pillar	Number	Action (How?)	Scale (Where?)	Timeframe (When?)	Timeframe Start	Pilot (Who?)	Partner (With whom?)
Enable	1	Update the legislative provisions, including the orientation law, decrees and enactment orders.	National	Short Underway term:	(Underway)	Urban Mobility and Transport Ministry (DNTTMF)	MATD SMIB (Greater Bamako) Municipalities ADR
Enable	2	Update the regulatory framework of urban mobility, taking the existing modes and their proposed evolution into account	National	Short Underway term:	(Underway)	Urban Mobility and Transport Ministry (DNTTMF)	MATD SMIB (Greater Bamako) Municipalities ADR
Enable	3	Conduct a study on the funding of transport services, focusing on resources that can be mobilized from indirect beneficiaries	National	Medium To do term:	3rd quarter 2020	Urban Mobility and Transport Ministry (DNTTMF)	MEF MIE
Enable	4	Identify the needs and the necessary means for the urban mobility sector to function in the medium and long term	National	Short To do term:	2nd quarter 2020	Urban Mobility and Transport Ministry (DNTTMF)	MEF SMIB (Greater Bamako) Municipalities ADR
Enable	5	Evolve from a Transport Observatory to a Mobility Observatory consolidating the data, within the Urban Mobility and Transport Ministry.	National	Short To do term:	2nd quarter 2020	Mobility and Transport Ministry (DNTTMF)	SMIB (Greater Bamako) Municipalities
Enable	6	For each city, identify the dates of the latest counting campaigns and statistically significant surveys and analyze the need for ad hoc updates.	National	Short To do term:	2nd quarter 2020	Mobility and Transport Ministry (DNTTMF)	SMIB (Greater Bamako) Municipalities ADR

Enable	7	Determine the type of data to be collected as a priority.	National	Short term:	To do	2nd quarter 2020	Mobility and Transport Ministry F)	ADR
Enable	8	Launch data collection campaigns whenever opportunities inherent to the projects arise.	National	Medium term:	To do	(Depending on the project)	Mobility and Transport Ministry (DNTTMF)	SMIB (Greater Bamako) Municipalities Funder
Enable	9	Require the systematic forwarding of available data to the Transport Observatory.	National		To be considered	3rd quarter 2020	Mobility and Transport Ministry (DNTTMF)	-
Enable	10	Define how the Urban Mobility Authority will work, especially its mode of governance	Greater Bamako	Medium term:	To do	3rd quarter 2020	SMIB (Greater Bamako)	Mobility and Transport Ministry (DNTTMF) ADR
Enable	11	Conduct a study on the responsibilities that may be assigned to the AOMU, indicating the expectations of the various stakeholders regarding the strategic and tactical aspects	Greater Bamako		To be considered	2nd quarter 2020	Mobility and Transport Ministry (DNTTMF)	SMIB (Greater Bamako) ADR
Enable	12	Map out the gradual development of the Urban Mobility Authority, starting with a technical entity governed by Greater Bamako	Greater Bamako	Short term:	To do	3rd quarter 2020	Mobility and Transport Ministry (DNTTMF) SMIB (Greater Bamako)	ADR Working Group on Urban Mobility
Enable	13	As soon as the AOMU is created, make it responsible for active modes of transport, such as walking	Greater Bamako	Medium term:	To do	4th quarter 2020	Mobility and Transport Ministry (DNTTMF)	SMIB (Greater Bamako) ADR
Enable	14	Use the resources of the Mobility and Transport Ministry to create departments prefiguring the future entities but	Secondary cities	Long term:	To do	2022	Mobility and Transport Ministry (DNTTMF)	Municipalities ADR

		remaining part of the ministry					
Enable	15	Develop a road map in conjunction with the decentralization process, especially concerning the location of the locally governed entities in secondary cities	Secondary cities	Medium term: To do	2021	Mobility and Transport Ministry (DNTTMF)	ADR
Enable	16	Use connections already made in the context of previous projects (unrelated to mobility), to begin a process of enabling neighborhood residents to voice their opinions on the challenges of urban mobility	Greater Bamako	Short To do term:	3rd quarter 2020	SMIB (Greater Bamako)	Mobility and Transport Ministry (DNTTMF) MIE MEADD
Enable	17	Gradually shift from information processes to consensus-building processes to ensure that the residents take ownership of the projects and the challenges involved	Greater Bamako	Long To do term:	2021	SMIB (Greater Bamako)	Mobility and Transport Ministry (DNTTMF) MIE MEADD
Avoid	18	Include a mobility component in the Urban Master Plans consistent with other strategic plans	National	Medium To do term:	(Depending on the progress of the urban master plans)	Mobility and Transport Ministry (DNTTMF)	MHULS ADR (Working Group on Urban Mobility and SMIB for Bamako)
Avoid	19	Encourage dialogue between the Mobility and Transport Ministry and the ministry in	National	Short To do	2nd quarter 2020	Mobility and Transport Ministry MHULS	ADR

		charge of urban planning						
		Conduct a study on the						
Avoid	20	possibility of having less monocentric cities based on coordinated urban transport services	National	Medium term:	To be considered	4th quarter 2020	MHULS	Mobility and Transport Ministry ADR
Shift	21	Launch information campaigns on the challenges of road safety with a focus on active modes, in the form of flyers and/or TV and radio airtime	National	Medium term:	To do	2021	Mobility and Transport Ministry (DNTTMF)	MIE (DNR, AGEROUTE) MHULS (DNU) ADR
Shift	22	Debunk the notion that cycling is the mode of transport of the poor, with the involvement of the highest officials through public awareness and information campaigns	National	Medium term:	To do	(Depending on progress)	Mobility and Transport Ministry	-
Shift	23	Hold "car-free days" or "pedestrian days" at symbolic locations such as the Sotrama Ring Road in Bamako or around markets to raise awareness about the benefits of active modes	Greater Bamako	Medium term:	To be considered	2021	SMIB (Greater Bamako)	Mobility and Transport Ministry (DNTTMF) MHULS ADR
Shift	24	Foster consensus building on the Bamako District project to upgrade the public transport fleet (underway)	Greater Bamako	Medium term:	To do	3rd quarter 2020	Mobility and Transport Ministry (DNTTMF) SMIB (Greater Bamako)	District Council Unions
Shift	25	Update the information on the operating costs of the owners and drivers of the different public transport modes	National	Medium term:	To be considered	4th quarter 2020	Mobility and Transport Ministry (DNTTMF)	Unions

Shift	26	Organize working sessions with the transport unions and make them permanent by setting up monitoring committees for the Sotrama and Duruni projects and programs	Greater Bamako	Medium term:	To be considered	3rd quarter 2020	Mobility and Transport Ministry (DNTTMF) SMIB (Greater Bamako)	Unions
Shift	27	Conduct a detailed study for a program to gradually upgrade public transport fleets on the road in secondary cities	National	Long term:	To do	2021	Mobility and Transport Ministry (DNTTMF)	SMIB (Greater Bamako) Unions
Shift	28	Establish a clearly delineated public transport network and update the regulations according to expectations (for operation) for the different modes including paratransit services	Greater Bamako	Long term:	To do	2021	SMIB (Greater Bamako) Unions	Mobility and Transport Ministry ADR
Shift	29	Find resources to conduct a feasibility study on river transport in general	Greater Bamako	Long term:	To do	2021	Mobility and Transport Ministry (DNTTMF)	COMANAV ADR
Shift	30	Open the mobility sector up to public/private partnerships and professionalize it	Greater Bamako	Medium term:	To do	4th quarter 2020	Mobility and Transport Ministry	-
Shift	31	Take account of the feasibility study on the urban development project for the riverbanks	Greater Bamako	Medium term:	To be considered	4th quarter 2020	COMANAV	SMIB (Greater Bamako) ADR
Shift	32	Take account of the river transport component of the study planned by the Greater Bamako urban master plan	Greater Bamako	Long term:	To be considered	2021	COMANAV	SMIB (Greater Bamako) ADR

Shift	33	Establish a framework for building consensus with the communities that work on the river	Greater Bamako	Long term:	To do	2022	Mobility and Transport Ministry	SMIB (Greater Bamako)
Shift	34	Develop regulations for river transport	National	Long term:	To do	2022	Mobility and Transport Ministry (DNTTMF)	F
Shift	35	Limit the development of the current public transport systems, which are based on cutthroat competition and individual profitability	Secondary cities	Long term:	To do	2021	Mobility and Transport Ministry (DNTTMF)	Municipalities ADR Unions
Shift	36	Conduct analyses of the projects to consolidate and professionalize the paratransit operators in place	Secondary cities	Long term:	To do	2021	Mobility and Transport Ministry (DNTTMF)	ADR Unions
Shift	37	Conduct analyses to choose the modes that are suitable with current operating conditions and desired conditions	Secondary cities	Long term:	To be considered	2022	Mobility and Transport Ministry (DNTTMF)	Municipalities Unions
Shift	38	Set up a committee in the Transport Observatory to monitor and analyze the initiatives of the GTMU launched in August 2019	Greater Bamako	Short term:	Underway	(Underway)	Transport Observatory	Working Group on Urban Mobility SMIB (Greater Bamako)
Shift	39	Sustain the actions of the GTMU and coordinate them with a study analyzing the traffic flows in Bamako	Greater Bamako	Medium term:	To do	3rd quarter 2020	Mobility and Transport Ministry (DNTTMF)	Working Group on Urban Mobility SMIB (Greater Bamako)
Shift	40	Give the Transport Observatory the human, material and financial resources it needs to launch studies	Greater Bamako	Medium term:	To do	4th quarter 2020	Mobility and Transport Ministry	Transport Observatory

Shift	41	Launch analyses of traffic flows (motorized and non-motorized) between the right and left riverbanks during rush hour	Greater Bamako	Medium To be term: considered	4th quarter 2020	Transport Observatory	Working Group on Urban Mobility SMIB (Greater Bamako)
Shift	42	Review the priorities in place for collective transport	Greater Bamako	Medium To do term:	2nd quarter 2020	Transport Observatory	Working Group on Urban Mobility SMIB (Greater Bamako)
Shift	43	Study the prospects of maintaining or transforming the Sotrama Ring	Greater Bamako	Medium To be term: considered	4th quarter 2020	Transport Observatory	Working Group on Urban Mobility SMIB (Greater Bamako)
Shift	44	Review the vertical and horizontal road signage in place	Greater Bamako	Short To be term: considered	3rd quarter 2020	Transport Observatory	Working Group on Urban Mobility SMIB (Greater Bamako)
Shift	45	Launch a study on goods transport	Greater Bamako	Medium To be term: considered	4th quarter 2020	Mobility and Transport Ministry (DNTTMF)	Transport Observatory SMIB (Greater Bamako) Working Group on Urban Mobility

Shift	46	Conduct a study for a general traffic plan and implement it	Greater Bamako	Medium term:	To be considered	2021	Working Group on Urban Mobility	Transport Observatory SMIB (Greater Bamako)
Improve	47	Obtain a clear inventory on vehicle quantities, types and ages	Greater Bamako	Short term:	Underway	(Underway)	Mobility and Transport Ministry (DNTTMF)	SMIB (Greater Bamako) Unions
Improve	48	Analyze the possibilities and types of vehicles for passenger transport likely to be compatible with current conditions	Greater Bamako	Short term:	Underway	(Underway)	Mobility and Transport Ministry (DNTTMF)	SMIB (Greater Bamako) Unions
Improve	49	Take account of future operating costs for the different public transport modes	National	Medium term:	To be considered	4th quarter 2020	Mobility and Transport Ministry (DNTTMF)	Unions
Improve	50	Create a space for discussion between the institutional and private stakeholders of the mobility sector	National	Long term:	To do	2021	Mobility and Transport Ministry (DNTTMF)	SMIB (National) Unions
Improve	51	Guide the upgrade of the fleet with a process of professionalizing the private stakeholders	Greater Bamako	Long term:	To do	2021	Mobility and Transport Ministry (DNTTMF)	SMIB (Greater Bamako) Unions
Improve	52	Take stock of the current situation of taxis in Bamako and in a pilot secondary city	National	Short term:	To do	3rd quarter 2020	Mobility and Transport Ministry	Unions
Improve	53	Help the taxis stakeholders navigate a separate process of professionalization in each category	National	Long term:	To do	2021	Mobility and Transport Ministry	Unions ADR

Improve	54	Develop appropriate, sufficient regulations for shared and individual taxis	National	Long term:	To do	2021	Mobility and Transport Ministry	Unions
Improve	55	Open up possibilities to establish modern taxi companies targeting a social category capable of paying higher fares for better service in terms of comfort	Greater Bamako	Medium term:	To do	4th quarter 2020	Mobility and Transport Ministry	SMIB (Greater Bamako)
Improve	56	Utilize new technologies and applications to guarantee the profitability of the services	Greater Bamako	Long term:	To be considered	2021	Mobility and Transport Ministry	SMIB (Greater Bamako)
Improve	57	Raise the taxes on motorcycles, especially two-stroke motorcycles (incomplete combustion), based on the polluter-payer principle	National	Short term:	To do	3rd quarter 2020	Mobility and Transport Ministry (DNTTMF)	ADR SMIB (Greater Bamako) Municipalities
Improve	58	Lay down regulations concerning motorbike taxi services, limiting their operations to areas where these services are relevant and taking into consideration public transport services in each city	National	Long term:	To do	2022	Mobility and Transport Ministry (DNTTMF)	SMIB (Greater Bamako) Municipalities
Improve	59	Maintain projects already underway to upgrade the Sotrama minibuses on the road	Greater Bamako	Short term:	To do	(Underway)	Mobility and Transport Ministry (DNTTMF)	SMIB (Greater Bamako) ADR
Improve	60	Restrict the use of poor- quality fuels for passenger transport by controlling fuel distribution and	National	Long term:	To be considered	2021	Mobility and Transport Ministry (DNTTMF)	MEADD MIE

		conducting periodical inspections					
Improve	61	Advance the possibility of shifting progressively from two-stroke engines to four-stroke engines for motorcycles	National	Medium To do term:	4th quarter 2020	Mobility and Transport Ministry (DNTTMF)	MEADD
Improve	62	Set acceptable age limits on collective transport vehicles	National	Long To be term: considered	2021	Mobility and Transport Ministry (DNTTMF)	SMIB (Greater Bamako) Municipalities ADR