Mainstreaming Transport and Mobility into Jordan's National Urban Policy Thematic Guide

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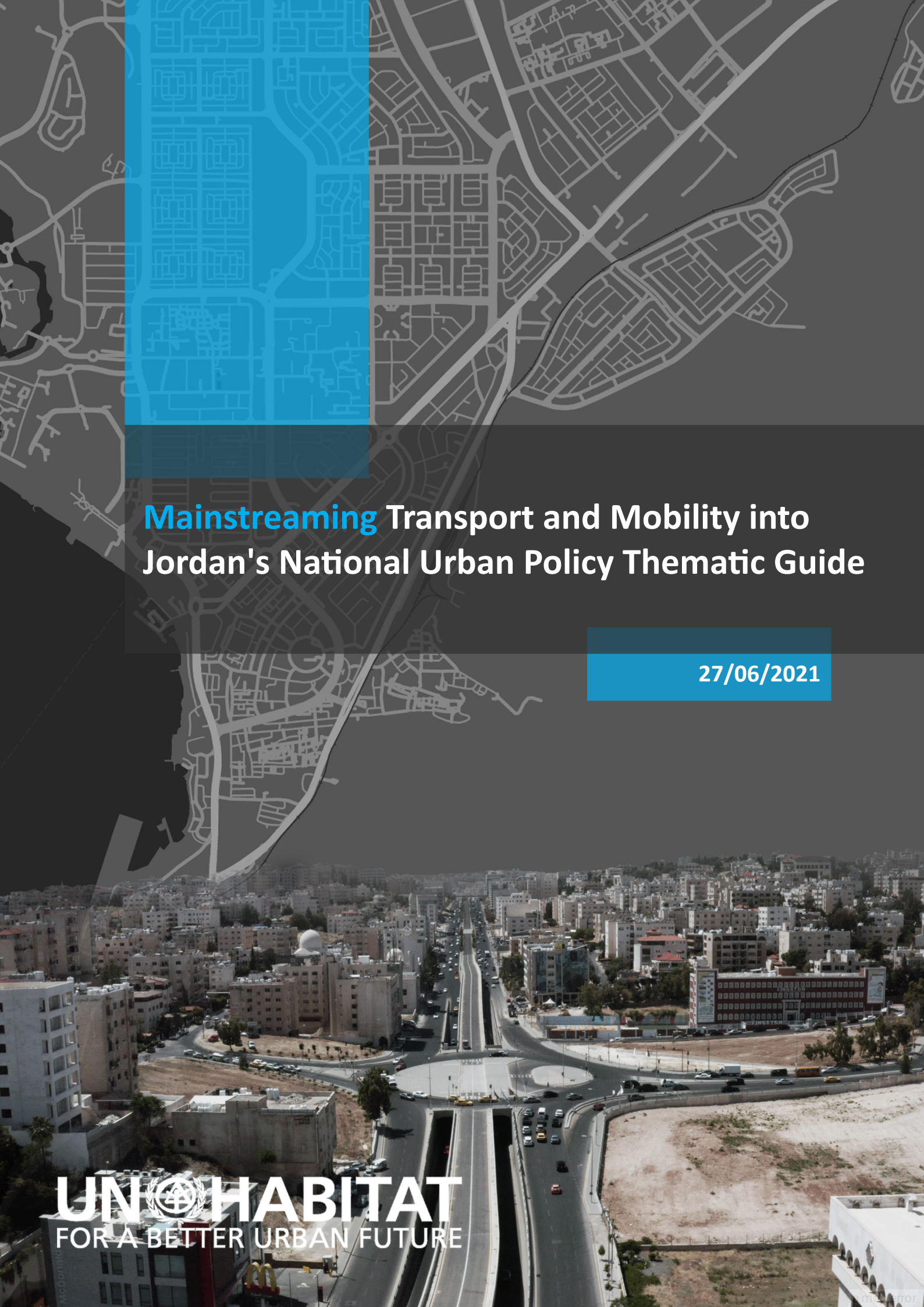

UN HABITAT
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LIST OF ABRREVIATIONS

LIST OF ACRONYMS

AFD	Agence Française de Développement
AI	Artificial Intelligence
ARC	Aqaba Railway Corporation
ASEZA	Aqaba Special Economic Zone Authority
AVs	Automated Vehicles
BRT	Bus Rapid Transit
CAVs	Connected and Automated Vehicles
CSD	Commission for Sustainable Development
FAR	Floor Area Ratio
JAICA	Japan International Cooperation Agency
GAM	Greater Amman Municipality
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GHGs	Greenhouse Gases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoJ	Government of Jordan
IoT	Internet-of-Things
JHRC	Jordan Hejaz Railway Corporation
JNUP	Jordan National Urban Policy
JPOI	Johannesburg Plan of Implementation
KPIs	Key Performance Indicators
LTRC	Land Transport Regulatory Commission
MAAS	Mobility-as-a-Service
MENA	Middle East and North Africa
MoF	Ministry of Finance
MoI	Ministry of Interior
MoLA	Ministry of Local Administration
MoPWH	Ministry of Public Works and Housing
MOT	Ministry of Transport
NGOs	Non-Governmental Organizations
NMT	Non-Motorized Travel
NUA	New Urban Agenda
NUP	National Urban Policy
OECD	Organisation for Economic Cooperation and Development
OEMs	Original Equipment Manufacturers
PDTRA	Petra Development and Tourism Region Authority
P2P	Peer-to-Peer
PPP	Public-Private Partnership
PPPP	Private Public People Partnership
PT	Public Transport
QAIA	Queen Alia International Airport
R&D	Research and Development

LIST OF ABRREVIATIONS

SDGs	Sustainable Development Goals
TODs	Transit-Oriented Developments
V2I	Vehicle to Infrastructure
V2P	Vehicle to Pedestrians
V2V	Vehicle to Vehicle
VMT	Vehicle Miles Travelled
WSSD	World Summit on Sustainable Development

1 EXECUTIVE SUMMARY

1. EXECUTIVE SUMMARY

Transport is widely recognized as a prerequisite for sound economic development, as it drives competitiveness, growth, and job creation. It provides access and mobility to employment and education, allows for the import and export of goods, and connects the resource base with the demand base. In Jordan, transport is considered a key enabler and driver for the Jordanian economy and represents one of its most important competitive factors.

However, the transport sector in Jordan, specifically the urban transport system (roads and public transport), has been worsening due to the increased demand for travel resulting from several factors, including an outburst in population, the massive and sudden influx of Syrian refugees, and the concentration of population in major urban areas. All of this is exacerbated by the car-dominant culture in the country, which has led to an exhausted sector and, consequently, unsustainable mobility patterns in the country.

An assessment of the country's urban transport and mobility sector has revealed that the sector suffers from several gaps and challenges that have accumulated over the years. Those challenges include:

- Weak financing and investment in the transport sector.
- The increased demand for transporting goods and passengers due to population and economic growth.
- The lack of a clear and an efficient institutional setup, resulting in unclear responsibilities between authorities.
- The lack of comprehensive planning for the different sector elements.
- Car dominance.
- The lack of investment and supply of sustainable transport modes such as public transport.
- Clear deficiency in the planning and implementation of other sustainable modes of transport such as walking, cycling, and smart mobility.
- High rates of transport accidents, injuries, and fatalities.
- Air pollution and environmental impacts, whereby, like most countries, air pollution resulting from the transport sector is considered one of the greatest sources of pollution.
- The lack of qualified technical and professional staff to lead comprehensive planning initiatives in the sector.

In an attempt to tackle some of these challenges, the Government of Jordan (GoJ) is currently constructing two Bus Rapid Transit (BRT) projects, one in Amman and one between Amman-Zarqa. These systems are expected to be the building blocks for an improved and enhanced public transport system in the country and, consequently, drivers for more sustainable mobility patterns. It should be noted here that Sustainable Transportation, refers to any means of transportation that is 'green', has low impact on the environment, and is concerned with balancing our current and future needs.

However, those projects / initiatives alone are not enough, as it is necessary that more is done to move towards a more sustainable and resilient transport sector. the current upgrades being implemented seem to solely focus on improvements to the transport sector without analyzing and investigating the bigger picture.

Sustainable and resilient transport systems allow for improved access to jobs, education, and resources for all users including the less advantaged groups. Therefore, there is a necessity to integrate transport and mobility planning into urban planning to allow for more inclusive, compact, and livable cities for all communities.

Within the above context, the UN-Habitat Regional Office for Arab States, in collaboration with the Regional and Metropolitan Planning Unit at the Urban Planning and Design Branch of UN-Habitat, aims to support the GoJ to initiate the development of a sustainable, inclusive, and evidence-based National Urban Policy (NUP) for the country. The main objective of the Jordan National Urban Policy (JNUP) is to strengthen policy-making capacities in Jordan and promote a participatory and inclusive approach to urbanization with a focus on the evidence-based planning and policy as well as accountability aspects.

Recognizing the criticality of the transport and mobility sector and its interdependencies with urban planning and policies in Jordan, this thematic guide has been developed to mainstream urban mobility and transportation into the JNUP. The guide was developed based on an assessment of the urban mobility and transport sector in Jordan in order to derive recommendations on: how urban mobility and transportation can be incorporated in urban policies to promote sustainable development, mainstreaming urban mobility and transport development to the JNUP cross-cutting pillars and to the phases of the JNUP process, as well as developing a road map to initiate the policy process.

Amman, Jordan © UN Habitat (2021)

2 INTRODUCTION

2. INTRODUCTION

The transport industry has always been a key enabler and driver for the Jordanian economy and represents one of the more significant competitive factors of the country. The value of the transport sector contribution and supporting activities to GDP in 2018 was 7.42%*. It is widely recognized as a prerequisite for sound economic development, as it drives competitiveness, growth, and job creation within the country. It additionally provides access and mobility, allows for the import and export of goods, as well as allows for the domestic transport of goods.

Within the above context, it is important to note that the transport sector in Jordan, specifically the urban transport system (roads and public transport), has been worsening for some time now. This is primarily a result of the growth of transport demand, both passengers and freight, due to several factors, including significant population growth, substantial increase in dwelling units and businesses in major urban areas, the massive and sudden influx of Syrian refugees, as well as the concentration of the population in major urban areas (such as Amman, Zarqa, and Irbid) where employment opportunities are higher than other urban and rural areas. This is coupled with the lack of comprehensive, inclusive, and integrated urban planning practices that allow for sustainable growth patterns in the form of livable and accessible settlements and developments. All of this is exacerbated by the dominance and dependency on motorized transport and private cars in the country, which has led to an exhausted transport sector and, consequently, unsustainable mobility patterns in the country.

Nonetheless, and in an attempt to relieve the traffic congestion and alleviate the associated environmental issues, the Government of Jordan (through MOT and GAM) is currently constructing a couple of high-capacity public transport projects that aim at changing travel behavior and patterns in the country, specifically the introduction of BRT services in Amman and Amman-Zarqa. These systems are expected to be the building blocks for an improved and enhanced public transport system in the country. Additionally, the air and freight systems have witnessed noticeable improvements recently reflected in the upgrade of Queen Alia International Airport and the Aqaba seaport.

Within the above context, this thematic guide has been developed to mainstream urban mobility and transportation into the JNUP. This guide was developed based on an assessment of the urban mobility and transport sector in Jordan in order to derive recommendations on: main urban mobility and transport plans and priorities, mainstreaming urban mobility and transport development to the JNUP cross-cutting pillars (capacity building, participation and acupuncture projects), mainstreaming urban mobility and transport development to the phases of the JNUP process (feasibility, diagnosis, formulation, implementation and monitoring and evaluation), as well as developing a road map to initiate the policy process.

This thematic guide targets policy makers and stakeholders involved in formulating, developing, monitoring, and evaluating the JNUP, as well as stakeholders in the public and private sector involved in urban mobility and transport development. This guide addresses how urban mobility and transportation can be incorporated into urban policies to promote sustainable development. It highlights key policy issues worth considering while giving options for the various entry points and factors affecting urban mobility and transport sectors.

* *(MoT, 2018)*

3 WHY MAINSTREAM TRANSPORT AND MOBILITY INTO JNUP?

3. WHY MAINSTREAM TRANSPORT AND MOBILITY INTO THE JNUP

3.1 THE JORDAN NATIONAL URBAN POLICY PROCESS

Jordan has been experiencing a steady increase in its urban population exacerbated by the successive waves of forced migrants from surrounding countries, most of whom live in urban settlements outside of camps. With the country's limited resources, Jordan is encountering a wide range of urban challenges, such as informal urban expansions and increasing rental prices, water deficiencies, shortage of housing and other basic services, as well as environmental degradation and pollution. Moreover, the current economic growth has not generated enough decent job opportunities to sustain the increasing population while the national budget deficit and foreign debts due to energy import dependency have increased. In this challenging environment, the current urban planning and management practices are inadequate to curb Jordan's urban growth.

In line with Jordan's 2019-2022 priorities in managing the country's urban growth and its Vision 2025, the UN-Habitat Regional Office for Arab States, in collaboration with the Regional and Metropolitan Planning Unit at the Urban Planning and Design Branch of UN-Habitat, aims to support the GoJ to initiate the development of a sustainable, inclusive, and evidence-based National Urban Policy (NUP) for the country—the JNUP. According to UN-Habitat, an NUP is:

"A coherent set of decisions derived through a deliberate government-led process of coordinating and rallying various actors for a common vision and goal that will promote more transformative, productive, inclusive and resilient urban development for the long term." *

The NUP is thus seen as an important tool available to governments, policy makers, and local actors who seek to manage and direct rapid urbanization and to harness positive dividends of urbanization while simultaneously accommodating its inevitable stresses.

As shown in Figure 1 below, the NUP development process is composed of five overlapping and interrelated phases including the feasibility, diagnostic, formulation, implementation, as well as monitoring and evaluation. Throughout the five stages of the NUP process, three key pillars must be considered: inclusive participation, capacity development at all levels, and grounding policy through acupuncture projects, all of which endeavor to enable the NUP to respond to the challenges and opportunities presented by urbanization.

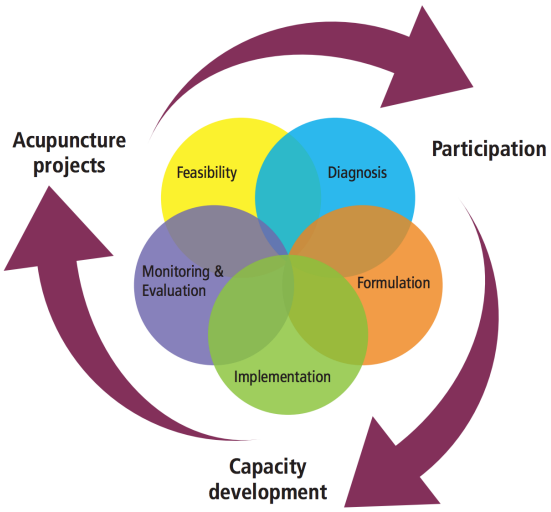

Figure 1: NUP Phases and Pillars
Source: UN-Habitat (2016)

* *(UN-Habitat, 2015, p.7).*

The NUPs are envisaged to have a potent ability to structure, organize, and harness urbanization opportunities to promote more transformative, productive, inclusive, and resilient urbanization. When it comes to transport and mobility, NUPs aim to promote sustainable mobility by providing definitive and coordinating frameworks for urban transport challenges and opportunities to be incorporated in subnational, national, and local urban planning scenarios. Accordingly, this will mitigate extreme externalities and provide opportunities for urban growth*.

Furthermore, the New Urban Agenda advocates for NUPs at the local and national scale as potential drivers of change, which, when effectively implemented, can derive positive benefits for urban management. The NUP applies best to SDG 11, which seeks to "make cities and human settlements inclusive, safe, resilient and sustainable"**. Target 11.2 states that, by 2030, there should be provided "access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons."*** ***This highlights the need to realize safe, affordable, accessible, and sustainable mobility through urban planning.***

The New Urban Agenda (NUA) is described as "an action-oriented document which set global standards of achieving sustainable urban future of cities; rethinking the way we build, manage, and live in cities through drawing together cooperation with committed partners, relevant stakeholders, and urban actors at all levels of government as well as the private sector."**** It contains several references to transport and mobility, making it a key agenda document in the development of this thematic guide. Some references from the NUA on transport and mobility are shown in Appendix A.

In addition, sustainable transport was featured in the 1992 UN Earth Summit outcome document and was featured in different global development agenda, reemphasizing the important role that sustainable transport holds in global development, as exemplified in Appendix B.

Recognizing the criticality of the transport and mobility sector and its interdependencies with urban planning and policies in Jordan, this thematic guide has been developed to mainstream urban mobility and transportation into the JNUP, in order to derive recommendations on how urban mobility and transportation can be incorporated into urban policies to promote sustainable development.

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* *UN-Habitat (2014) New Generation of National Urban Policies*

** *Transforming our World: Ibid*

*** *SDGs: Available at https://sustainabledevelopment.un.org/sdg11*

**** *New Urban Agenda. UN-Habitat (2016)*

3.2 IMPORTANCE OF MAINSTREAMING SUSTAINABLE TRANSPORT AND MOBILITY INTO THE JNUP

To grasp the importance of and the role that sustainable transport and mobility might play in facilitating growth and urbanizations, it is critical to first differentiate between "transport", "mobility", and "accessibility", as well as to understand what sustainable transport and mobility seek to achieve. Transport is the movement of goods, services, and people between two or more places, while mobility is the ability to access activity areas safely, quickly, and affordably, using environmentally friendly transport options*. Accessibility is understood as the ability to reach desired places, goods, services, activities, facilities, and destinations, collectively referred to as opportunities**. Accessibility is thus the ultimate goal of transportation.

Accessibility links mobility to activity areas (land uses) through a multiplicity of transport channels/modes***. Accordingly, on the one hand, sustainable urban transport refers to efficient, safe, and accessible transport means with low impacts on the environment, such as walking, cycling, low and ultra-low emission vehicles, car sharing schemes, and public transport. It aims to improve urban productivity as well as the living and working conditions of urban dwellers by adequately satisfying their mobility needs in an economically efficient, environmentally sustainable, and socially inclusive manner.

Sustainable urban transport seeks to:

- Link transportation to urban planning;
- Reduce motorized travel;
- Promote Non-Motorized Transport infrastructure development;
- Promote investment, development, improvement, and maintenance of public transport systems;
- Manage car traffic demand on the transport system; and
- Enhance vehicle and fuel technologies to enhance safe and green mobility (*People and Mobility: Ibid).*

However, on the other hand, **sustainable mobility** entails:

Time: using the shortest time possible to move between activity areas;

Affordability: costing the user the least amount of money;

Safety and security: the transport mode selected should be safe and secure for all users; and

Reliability: the transport mode can always be relied on (*Transport and Mobility Snapshots: Ibid).*

Within the above context, this guide builds on this understanding of the importance of sustainable transport and mobility to the country's future, and accordingly endeavors to integrate this into the policies and recommendations that will be recommended to be mainstreamed into the JNUP.

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* *Connective cities: From Transport Towards Environmentally Friendly Participation in Urban Life (https://www.connective-cities.net/en/topics/integrated-urban-development/urban-transport-and-mobility/)*

** *Accessibility. VTPI 2002. Online TDM Encyclopedia, Victoria Transport Policy Institute (www.vtpi.org)*

*** *Access to Destinations. (http://access.umn.edu/research/previous/destinations/) is a comprehensive research program by the University of Minnesota's Center for Transportation Studies (CTS) to develop practical methods for evaluating accessibility for transportation and land use planning applications.*

3.3 TRANSPORT SECTOR IN JORDAN: CONTEXTUAL ANALYSIS

Before considering the rationale for mainstreaming transport and mobility into the JNUP, it is important to review and understand the current conditions of the transport system in Jordan in order to be able to identify its gaps, constraints, opportunities, and stakeholders so as to ultimately define what policies need to be proposed to enhance its integration and role in urban planning.

3.3.1 CURRENT TRANSPORT INFRASTRUCTURE AND MODES

Currently, the transport sector in Jordan is composed of the following main transport modes:

- Road Network (passengers and freight)
- Public Transport (bus systems)
- Rail Transport (passengers and freight)
- Civil Aviation (passengers and freight)
- Maritime Transport (passengers and freight)

The following sub-sections provide a summary of the transport system components in Jordan.

3.3.1.1 ROAD NETWORK

Currently Jordan's main transport infrastructure consists of a 7,900 km-long road network, with some 3,400 km classified as main roads. Figure 2 below shows the national road network in Jordan as of 2010*.

Most of the motorways as well as primary and secondary road networks are in reasonably good condition and provide road capacities that mostly meet the demand of traffic flows among cities and urban areas. As such, connectivity between villages and cities is relatively well-covered by the national road network. However, due to the growth of transport demand, as explained above, major parts of the road networks in the country (mainly inside Amman, Zarqa and Irbid) are under pressure and their performances are well below the desirable levels. Without interventions, the transport system will not be able to perform its role in supporting the Jordanian economy and may—on the contrary— negatively impact the economy.

To address these challenges, over the past 10-15 years the Government of Jordan has tried to invest in expanding the road network, which constitutes the backbone of the national transport system in the country. These investments focused on building new highways and upgrading existing ones to connect cities and major urban areas with one another as well as upgrading major corridors and interchanges inside key cities in the Kingdom. As such, several road projects and road upgrades have been implemented or planned throughout the country to accommodate the growing traffic demand as well as facilitate mobility and accessibility. The aim was to improve urban and intercity mobility, enhancing the logistic industry and improving the international connections with neighboring countries (mainly Saudi Arabia and Iraq). However, this approach is not a comprehensive solution to the mobility challenges facing the country, as road capacity enhancements are not always the strategic or the sustainable solution.

* *JNTS, 2010*

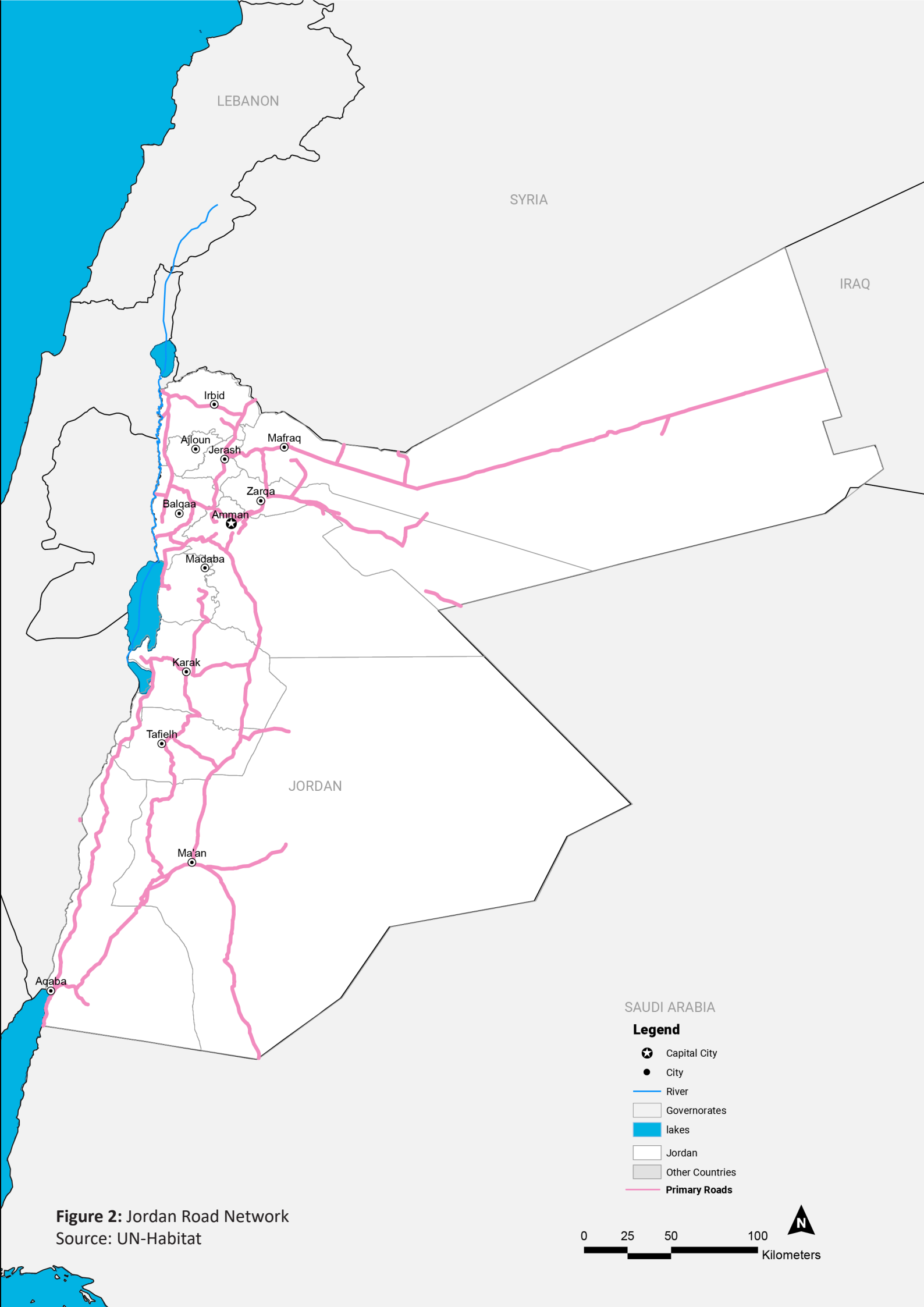

Figure 2: Jordan Road Network
Source: UN-Habitat

3.3.1.2 PUBLIC TRANSPORT (BUS SYSTEMS)

When it comes to public transport, there is a palpable delay in improving and growing the supply of public transport in the country. Currently, a network of mainly unscheduled bus services of different types (regular city buses, intercity buses, local minibuses, and service taxis) are the primary public transport services in Jordan. Public transport facilities are currently limited to public transport terminals in major cities (Departure and Arrival Terminals), which are deployed by the Land Transport Regulatory Commission (LTRC). The LTRC is responsible for identifying the location of terminals as well as designing and constructing these new terminals to improve the operations and the level of service of public transport service.

Bus services in Jordan usually operate from start location to end location with only a few stops available in between for passengers to alight the vehicles. Since buses normally start their journey only once, they are usually full when they depart. It is not common to pick up passengers along the route and, therefore, passengers need to travel to the start terminals to catch the bus. In bigger cities, this first leg of the journey is carried out by minibuses, taxis, or service (route) taxis.

Furthermore, one of the crucial dilemmas facing the public transport sector is the individual property of public transport vehicles. For example, several people share the ownership of one bus. Consequently, several problems and complications arise that make it very difficult for authorities to deal with the operators of public transport and/or to implement regular public transport service. Additionally, major bus operators usually operate the routes with the highest demand to ensure profits, which leaves the rest of the routes that serve suburbs and villages to individual operators that offer lower levels of service. There is also a large disparity in public transport tariffs depending on the route and the likely financial return for each operator, leading to irregular operations.

There is a noticeable absence of high-capacity (or mass) public transport service, as well as an absence of other basic public transport facilities almost everywhere (such as bus stops, transfer stations, etc.). Furthermore, no integrated fare structure is implemented (i.e. passengers pay for each part of their journey whenever they board a bus). Automatic fare collection is limited to few bus routes in Amman, while cash is the only payment method accepted by most public transport services.

Within this context, public transport users often complain about the quality of the services provided, specifically regarding the low frequency of buses and the lack of information on the routes. As a result, the percentage of public transport users in Jordan accounts to a mere 14% and transport is dominated by private vehicles at 35%, walking at 25%, school bus at 13%, and taxis at 10%*.

3.3.1.3 RAILWAY NETWORK

A 294 km-long narrow-gauge railway line, managed by the Aqaba Railway Corporation (ARC), transports phosphate and other mining products from the mines to the port of Aqaba. Other rail sections (~210 km) managed by the Jordan Hejaz Railway Corporation (JHRC) are not in operation with scheduled services. Due to the over a century old infrastructure, the historical Hejaz railway mainly provides touristic services with vintage trains from Amman to Wadi Rum. A few attempts to offer scheduled passenger services over the years, such as Amman – Damascus or Amman – Zarqa with shuttle connections from the city centers to the respective railway stations, were given up due to the lack of demand or for political reasons (conflict in Syria).

* *(MoT, 2012)*

Furthermore, there are ambitious plans to build a National Railway Network in Jordan, which aims at developing a modern and reliable freight railway network linking the country's key cities (such as Amman, Mafraq, and Zarqa), the country's gateway port (the Port of Aqaba on the Red Sea), and the largest phosphate mine (Shidiya Mine) – as shown in the below figure. The project itself is organized to integrate the Jordan railway network with the regional network, which is mainly under development, by establishing effective rail connections with neighboring countries.

According to the available information about the project, the Jordan National Railway will consist of three parts:

1. The "North-South Line", from the Syrian border to the Port of Aqaba via Amman (509 km), including rail links to the country's largest phosphate mine (Shidiya Mine) and to the South Terminal of the Port of Aqaba.
2. The "Zarqa-Iraq Link", from the city of Zarqa to the Iraqi border (290 km).
3. The "Link to Kingdom of Saudi Arabia" will complete the bridge between Saudi Arabia and Syria and will be an important component of a rail transport corridor between GCC countries and Europe (91 km).

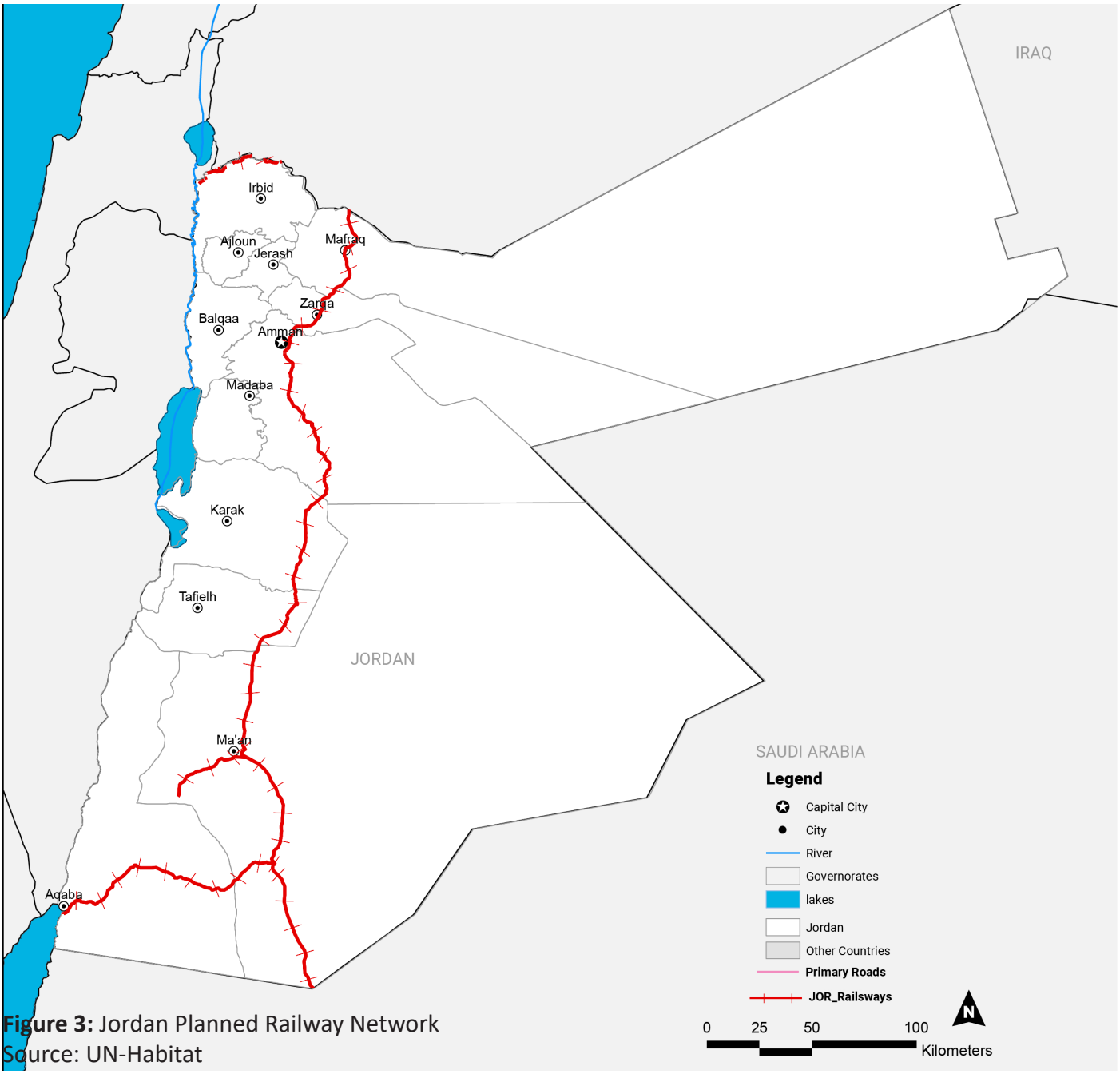

Figure 3: Jordan Planned Railway Network
Source: UN-Habitat

3.3.1.4 AIRPORTS

Three international airports operate in Jordan: Queen Alia International Airport in Amman, King Hussein International Airport in Aqaba, and Amman Civil Airport in Amman (Marka). Currently, the latter two only have a marginal role. In the future, this might change, as Marka airport will be allowed to operate scheduled flights as soon as annual passenger numbers exceed 8 M pax at Queen Alia International Airport. Additionally, presently there are only a limited number of domestic flights between Amman (Queen Alia International Airport) and Aqaba airports. With about 75,000 planes arriving and departing annually at the three airports, international flights play the major role in Jordan.

3.3.1.5 SEAPORTS

The only seaport is in Aqaba on the Red Sea. The main destination for passenger transport through the port of Aqaba is Egypt. The "Arab Bridge Maritime" operates scheduled ferry connections several times per day, partly for passenger cars and passengers, and partly for trucks.

Besides passenger transport, the port of Aqaba is developing three port units; main port, middle port, and southern / industrial port, with increasing capacities for handling goods, mainly imports and exports to and from Jordan. Major import quantities handled in the port of Aqaba comprise cereals, crude oil, and consumer goods, while exports are dominated by phosphate, potash, and fertilizers.

3.3.2 ONGOING AND PLANNED IMPROVEMENTS IN THE TRANSPORT SECTOR

In an attempt to relieve the traffic congestion resulting from the dependency and dominance of private cars in the country as well as to alleviate the associated environmental challenges, Jordan is currently constructing a couple of high-capacity public transport projects that aim at changing travel behavior and patterns in the country. These include the current development of the BRT services in Amman and between Amman-Zarqa. These systems are expected to be the building blocks for a future nation-wide high-capacity public transport system.

Additionally, since late 2019, GAM has been running an improved public transport service using modern buses through the Aman Vision buses. Furthermore, there are plans by the Ministry of Transport (MOT) to build a national rail network across the kingdom that would potentially be part of a regional rail network.

3.3.2.1 AMMAN BRT

Amman's BRT will be the city's first bus rapid transit system (BRT), in which premium and high-capacity buses run on exclusive and completely segregated lanes. The system will include the development and design of stops, stations, passenger information points, interchanges, and terminals, with buses running on a possible frequency of 2-3 minutes along Amman's busiest corridors.

The BRT corridors in Amman are not being designed in isolation. Rather, they are being incorporated into an integrated public transport network. For a user to get from their doorstep to their workplace, they may require more than just a BRT ride. Therefore, an extensive network of feeder services is being designed along with the BRT. These feeders will mostly be buses but may also include smaller vehicles. They are meant to carry users to the nearest BRT stop and will also provide high-quality and frequent services that will minimize the time people have to sit and wait for the bus.

The current phase of the project includes the construction, planning, and equipping of two BRT corridors, having a total length of 25km and a total cost of approximately 250 million USD, of which two-thirds is financed by the 'Agence française de développement' (AFD). It is expected that 140 articulated buses will eventually carry more than 315,000 daily passengers. The two routes will serve major transit routes in the city (e.g., the University of Jordan, Sport City, and the Mahatta Terminal).

The main objectives of Amman's BRT urban network are the following*:


Improvement of mass public transportation as well as traveling conditions and accessibility to employment areas;


Reduction of polluting emissions; and


Strengthening management capacity building in the city of Amman (as this is the biggest public transport project in the country).

The implementation of the BRT system consists of three major categories, including:


Infrastructure: building of bus lanes, stations, terminals, etc. This will also include road work to alleviate current traffic congestion problems at some of the key intersections along the BRT routes.


Operations: the operation of the system will be handled by a private operator to be selected through competitive bidding. The operator will be responsible for providing buses, developing the depot, hiring, and training drivers, as well as handling customer service functions.


Ticketing system: an effective payment system is essential for supporting the operation of the BRT. This is especially true for expediting passenger loading/unloading and reducing the bus dwell time at each station.

Amman's BRT is expected to be operational from 2022 and aims to increase the percentage of those using public transport as their mode of travel from its current 14% share.

The BRT project started in 2010. It stopped in the summer of 2011 amid concerns over its feasibility and funding capacities, which saw the Cabinet suspend the project and halt all related tenders. In 2015, the government decided to resume the project as part of a plan to provide transport solutions and ease traffic congestion in Amman. Therefore, a concession contract will now be established with a private operator who will provide buses and manage the joint operation of both Amman and Amman-Zarqa BRTs (the latter being financed by the Jordanian Government). The system will be expanded over time to cover all of Amman's neighborhoods.

* *GAM, 2018*

3.3.2.2 AMMAN-ZARQA BRT

The Amman-Zarqa BRT was planned to address the growth of population and mobility in the Amman-Zarqa metropolitan areas. The inter-urban trips between Amman and Zarqa, were estimated to be somewhere between 60,000 to 70,000 daily passengers, and the public transport modes taken during these trips are currently dominated by minibuses (65%), followed by buses (28%), and a minority (7%) using white (service) taxis in their commute.

It is expected in its first year after its completion that the daily BRT patronage on the system would be 65,100 passengers (68,600 in case of extension of service to Hashemite University). Daily patronage in 2048 are estimated to be 115,000 - 120,000 passengers.

The objectives of the Amman-Zarqa BRT are to*:

- Implement an efficient inter-urban BRT service between Amman and Zarqa, offering a frequent, reliable, comfortable, and affordable public transport.
- Provide BRT service to the main intermediate mobility generators between Amman and Zarqa.
- Consider an extension of BRT service to Hashemite University located 12 km east of Zarqa.
- Integrate the Amman-Zarqa BRT within a reorganized transport system of feeder services connected to both terminals and intermediate stations on the Amman-Zarqa corridor.
- Connect the Amman-Zarqa BRT with the Amman BRT in Mahatta Terminal in order to ensure smooth transfers between the two services for passengers.
- Guarantee the technical interoperability between the Amman-Zarqa BRT system and the Amman BRT to keep further integration possible in the future.
- Provide technical provisions for a future branch of Amman-Zarqa BRT towards North Terminal.

3.3.2.3 AMMAN VISION BUS

As part of the Amman Vision Project to promote the use of public transport, Greater Amman Municipality (GAM) has procured 100 new buses through a newly established semi-private company named Amman Modern Vision for Transportation Company. GAM plans to procure an additional 35 buses, which will be part of the full fleet planned to operate on the 57 routes defined by the company. The buses have capacities ranging between 60 and 40 passengers and will be operated and maintained by a private operator to be awarded. Payments are made via a special card that is purchased from selected vendors.

3.3.3 INSTITUTIONAL AND LEGISLATIVE SETUP OF THE TRANSPORT SECTOR

3.3.3.1 STAKEHOLDER MAPPING

Significant progress has taken place in Jordan since 2000 in areas related to establishing the legislative foundations for the entire transport sector, building institutions, opening the way for investment in infrastructure to the private sector, as well as creating the appropriate frameworks to promote trade, facilitate transportation, and separate roles between those concerned with policies, regulation, and operation. The main mode of transport in Jordan is land transport (roads and railway), which is governed by specific authorities. Shipping and air transport have their own legislative structure as well.

* *MOT, 2018*

Each mode of transport is developed and operated by several ministries, institutions, and agencies. At the national level, the following ministries are responsible for the planning, design, and operation of the transport sector, with different capacities and roles, as explained below:

- **The Ministry of Transport (MoT)** is responsible for developing policies and strategies for the land and maritime transport sector and civil aviation in Jordan under the Transport Law No. 89 of 2003. Additionally, the MoT is responsible for preparing the necessary research and studies to develop the sector, issuing bulletins and periodic reports on its activities, as well as following up on the implementation of bilateral and international transport agreements.
- **The Ministry of Public Works and Housing (MoPWH)** is the authority responsible for the planning, construction, and maintenance of road infrastructure, according to Roads Law No. 24 of 1986 and the regulations issued pursuant to it, with the exception of road networks within the respective boundaries of GAM, ASEZA, and PDTRA. The MoPWH is not responsible for public transport operation and transportation of goods on the road network. The MoPWH has 12 regional offices within each governorate and local municipalities are responsible for maintaining the streets within their boundaries, but not the main roads and highways.
- **The Ministry of the Interior (MOI)**, under the Traffic Act No. 49 of 2008 and through the Drivers and Vehicle Licensing Department at the Public Security Directorate, is responsible for vehicles' licensing and inspection to ensure their safety to drive on the roads, as well as testing and licensing of driver's licenses for all categories of driving. It is additionally responsible for traffic enforcement across the country.

As for the regulatory functions of the sector, there are different regulatory bodies responsible for implementing strategies and policies and for the operation of its systems. Some of these regulatory bodies are linked to the Ministry of Transport.

There are other government bodies that are responsible for organizing transport within their organizational boundaries, such as the Greater Amman Municipality, which has the powers to regulate public transport for passengers within its organizational boundaries through a temporary law issued in 2007. Additionally, development and economic zones were given the authority to plan, provide and organize economic services, including transportation within their borders. The Aqaba Special Economic Zone Authority, for example, is the party concerned with transport activities within its borders under the Aqaba Special Economic Zone Law and its amendments No. 32 of 2000. The port of Aqaba, which is the only port in Jordan, is managed and operated by the Aqaba Company for Port Management and Development (formerly the Ports Corporation) under the supervision of the Aqaba Development Corporation. Moreover, regarding the organizational side, the port is affiliated with the Aqaba Special Economic Authority system.

Therefore, the previous contextual analysis of Jordan's urban transport and mobility sector clearly shows the historical dependency and dominance of cars in the transport sector as well as the poor supply of sustainable and environmentally friendly transport systems and modes, which have become vital factors in enhancing the resiliency, competitiveness, and overall performance of any country's transport sector.

3.4 STAKEHOLDERS ASSESSMENT OF TRANSPORT AND MOBILITY SECTOR CHALLENGES

Some of the stakeholders identified in the previous sub-section were asked to evaluate the current transport and mobility sector in Jordan from their own perspective, define the key challenges and opportunities in the sector, as well as other relevant questions. Their responses are summarized in Table 1 below.

Table 1: Evaluation of Jordan's Transport and Mobility Systems from Stakeholders' Perspective

Number	Item	Stakeholder		
		MOT	LTRC	GAM
1	Evaluation of the transport and mobility sector in Jordan (excellent, good, reasonable, weak, bad)	**Reasonable.** We need more investments in the public sector, which has already started by introducing BRT system and urban bus reform in Irbid and Zarqa.	**Weak.** There is no provision of a regular public transport service that meets the demand for public transport services and provides them with a good standard and reasonable cost.	**Reasonable.** Current public transport system is reasonable, with good accessibility in urban areas. However, it can be unreliable and uncomfortable, which has led to the majority of trips being made by private car, lea ding to high levels of congestion. Outside of urban areas accessibility is poor and services are often poor and infrequent. Future planning is good, and the implementation of large mass transit projects has the prospect to improve all aspects of transport and mobility.

Number	Item	Stakeholder		
		MOT	LTRC	GAM
2	The main challenges facing the transport sector in Jordan	-Lack of Financial resources. -Lack of coordination between different stakeholders. -Lack of data.	-The export movement of some countries was affected due to political instability. -Insufficient financial allocations to fully develop the transport sector. -Political orientations sometimes lead to an unwillingness to activate some international agreements. -Political instability in neighboring countries. -Failure to obtain external grants for projects aimed at sustainable development.	-Insufficient funding. -Public & media attitude. -Topography of the city. -Insufficient road space for allocating to other modes. -Lack of coordination between all stakeholders in the sector. -Lack of data to carry out transportation studies. -Absence of clear priorities for transportation projects. -Lack of effective planning which leads to project delays and in some cases project freezing. -The population of the cities is increasing urban sprawl and its consequences. -Public transport systems do not provide full coverage. -High travel times resulting in economic and social costs and transport dependence on the private car. -Worrying air pollution levels.

Number	Item	Stakeholder		
		MOT	LTRC	GAM
3	The main opportunities that can be seized to improve the transport sector in Jordan	-Government endorsement of PPP. -Donors' willingness to support. -Importance of Jordan as a HUB.	-Political stability in Jordan helped in the growth of investment in the sector. -An attractive environment for investors and the exploitation of infrastructure by investment to serve sectors. -The interest of higher government agencies in developing the sector and implementing smart transportation systems. -Availability of financial allocations for infrastructure projects within the government budget.	-Well qualified engineers. -Political will & encouragement of the country's leadership. -Global NGOs who are willing to provide technical and financial support to encourage sustainable transport. -Presence of several well-structured transportation departments in different agencies like GAM, MOT, etc., -Number of projects are under study, which will enhance the transport network in Jordan. -Coordination between entities in Jordan. -Building professional capacity for staff.
4	Clarity of the roles and responsibilities among the different entities managing the transport sector in Jordan from SH point of view	It is clear, achieved by setting a joint higher committee of transport.	It is clear, as the Ministry of Transport sets policies related to transportation and LTRC regulates land transport through the Passenger Transport Regulation Law No. 19 of 2017 for its services and encourages investment in the land transport sector in line with the goals of economic and social development.	It is clear within the same entity, but in some cases different entities are not aware of other entities' roles and responsibilities.

Number	Item	Stakeholder		
		MOT	LTRC	GAM
5	Level of professional capacity of the stake-holders / authorities managing the transport sector in Jordan	-Still lacking some expertise like railways. -Other expertise is available but not utilized.	Need to hold various training courses and workshops to qualify professionals capable of running the sector.	This is lacking in some domains, such as modern technologies, contracts management, and financial analysis capabilities.
6	The main challenges hindering the institu-tion from playing its role in the transport sector	Lack of coordination between different stake-holders.	-Political instability in the region. -Lack of financial alloca-tions for some projects. -Failure to implement the operators and their com-mitment to the Authority's laws.	-Lack of coordination between departments at same directorate. -Lack of historical data.

3.4.1 MAIN CHALLENGES

Accordingly, as displayed in the previous table, there was a consensus between the stakeholder that the main challenges that face the transport sector in Jordan can be summarized as follows:

- Lack of financial resources.
- Political instability in the region.
- Lack of sufficient and available data about the transport sector.
- Lack of proper coordination between transport Authorities.
- Lack of professional capacity and expertise in some domains, although available in others but not utilized.

Furthermore, there were some suggestions and recommendations to improve the transport sector in the country (especially public transport), which can be summarized as follows:

- Public transport and urban mobility systems need to be subsidized in order to ensure their efficiency and affordability.
- Regulate and control land transport and its services while encouraging investment in the land transport sector in line with the objectives of economic and social development.
- Encourage the important collaboration between public and private sectors by providing an attractive environment for local investments.
- Introducing railway systems in Jordan, especially intercity such as from Amman to Aqaba, which could encourage internal tourism and the use of Aqaba Airport as a feasible alternative to QAIA Airport in Amman.
- Improve the Public Transportation service in Jordan by:
  - Raising the quality of public transport services.
  - Stimulating the investment environment in the public transport sector.
  - Upgrading and developing infrastructure for the public transport sector.

3.4.2 EVALUATION OF BRT PROJECTS

Stakeholders were very optimistic about the BRT projects in Amman and between Amman and Zarqa. Stakeholders believed that the BRT projects will bring major benefits to the transport and mobility sector in Jordan, including:

- Improving the connectivity of public transport routes; a new practice for Jordan.
- Serving a large number of passengers, providing them with comfortable and reliable service.
- Attracting more demand after the early operations phase.
- Reducing the number of car trips inside Amman and between Amman and Zarqa.
- Users, particularly students, will be provided with convenient and comfortable transport, especially given that the BRT networks are planned to serve major educational establishments.

However, they believed that the success of the BRT projects depends on the acceptance of the users. Hence, it is important that the public is well informed about the BRT projects as well as their benefits and advantages.

3.4.3 EVALUATION OF COVID-19 IMPACT

Stakeholders were asked to provide their insights about the impact that the COVID-19 pandemic had on the transport sector. Their insights can be summarized as follows:

- The transport sector has been greatly affected by the pandemic through the decrease in the movement, due to the continued application of the lockdown and the closure of border crossing.
- Exposure of workers in the sector, including operators and transport companies of all types, to large financial losses due to (1) the restrictions imposed by the government on public transport operational capacities (to fight the spread of the virus), and (2) users avoiding using public transport from the fear of contracting the virus.

- Public transport is experiencing a drop in ridership in cities around the world due to the perceived dangers of travelling with others and the increase in people working from home.
- COVID-19 changed mobility patterns during the Government-issued lockdown/ movement restriction, which continued even after the lockdown ended. Intercity trips became less frequent than before, and some personal activities seem to have been abandoned.

Stakeholders also provided their views on the new opportunities that may present themselves in the transport sector in light of COVID-19. These responses can be summarized as follows:

- Citizens have urged the necessity of having available infrastructure for personal transportation when they are shopping around their residences as well as the necessity for spaces around them for walking and cycling.
- The experience during the pandemic gives a good indication of the extent to which the population accepts and uses technology in their daily lives (especially when it comes to transport and mobility) as they seem to trust smart applications more.
- The government should adopt development projects and plans that serve all governorates of the Kingdom to make them self-sufficient.
- The pandemic illustrated the ability of the public sector to handle some tasks in some departments online, which led to reducing cost and reducing the need for daily transport.
- The government should look for partnership projects with the private sector.
- There is a need for continuous development of legislation and laws governing the sector.
- There is a critical need to financially support the transport sector.
- There is a need to include transport sector workers in insurance programs designated to cover pandemics and serious health issues within the umbrella of social security.

3.4.4 STAKEHOLDERS' RECOMMENDATIONS FOR IMPROVING URBAN TRANSPORT

Finally, stakeholders were asked to suggest the policies they believe will improve the transport sector if implemented. The main policies can be summarized under each main dimension as follows:

Integrated Transport Planning:

- The transport system should be planned and implemented in full cohesion with land-use strategies.
- The transport system should be designed as an integrated system, with all transport modes operating in harmony.
- The resultant integrated transport system should provide a range of mode choices for all trips, whilst promoting public transport and walking as the preferred travel mode of choice.
- The integrated transport system should also provide for safety of travel by all users in an environmentally sustainable manner to meet the needs of the full range of transport users, including residents, commuters, and tourists.

Public Transport:

- Develop a public transport system that is accessible and affordable to all citizens.
- Improve the image and perception of public transport to all citizens and visitors, regardless of their socio-economic conditions.
- A major reduction in the growth of road traffic and a significant modal shift towards public transport and the soft modes should be achieved.

Accessibility and Connectivity:

- Improve the mobility of persons and freight as well as citizens' accessibility to services and goods.
- Complete the infrastructure of existing networks, optimize the utilization of transport facilities, and implement a multimodal transport system.
- Upgrade and develop infrastructure for land transport.
- Improve the level of services provided to citizens.

Financing:

- Create an attractive investment environment capable of attracting foreign capital and encouraging local investments.
- Introduce a clear priority list for transportation projects.
- Enhance the role of the private sector in the transport sector, where major transport projects and basic infrastructure need investments, and support from the government directly or through partnership with the public sector.

Environment and Sustainability:

- Enhance transportation safety, protect the environment, and limit the negative effects resulting from the transport sector, so that the transport system contributes to sustainable development,
- Reduce the negative environmental impacts of the road transport sector.

Coordination:

- Discuss the conflict points between departments within the same public entity and find ways to overcome them.
- Enhance the relations between the entities through defining the tasks and responsibilities for each of them.
- Establish a database or data inventory of the transportation sector data and previous studies to support the future planning of the transportation sector by providing the data required for analysis and investigation.

3.5 TRANSPORT AND MOBILITY SECTOR CHALLENGES

Based on extensive research into the transport sector in Jordan, and taking into consideration the stakeholders' feedback, the main challenges facing transport and mobility in Jordan include:

- **Financing:** Weak financing and investment is one of the most important challenges facing the transport sector in the Kingdom, whether regarding financing investments in new infrastructure or financing the operation of transport services for both vehicles and goods. Additionally, there is a scarcity of financial resources at the level of maintenance of infrastructure facilities, as well as a lack of government support for public transport.

- **Population and Economic Growth:** Due to the population and economic growth in Jordan and the region, the demand for transporting goods and passengers is increasing at a rapid pace and this growth is concentrated in parts of the transportation networks. As a result, parts of the networks are under pressure and the level of performance does not meet the acceptable levels. Therefore, serious intervention should be made, otherwise the situation will worsen, and the transportation system will not be able to provide the performance required to support the Jordanian economy.

- **Institutional Structure:** Although the country has come a long way in restructuring the sector, overlapping powers and responsibilities are still present. In general, the complex institutional structure of responsible authorities and regulatory bodies raises the following challenges:
  - Lack of a clear and an efficient institutional setup.
  - Lack of effective cooperation and clear responsibilities between authorities.
  - Lack of integration in the planning and operation of transport systems.

- **Integrated Planning:** There is a lack of comprehensive planning for the different sector elements, as it is hindered by bureaucracy and in-efficient institutional setup. This leads to poor connectivity and lack of transportation alternatives for people and goods between urban and rural areas.

- **Car Dominance:** The private car is still the dominant mode of transport within and between cities, mainly due to the lack of alternative modes of transport that are more economical and convenient. This leads to further congestion and delays on the road network.

- **Public Transport:** There is a lack of investment and supply of sustainable transport modes such as public transport. Public transportation does not seem to be a priority for the government and does receives little attention in comparison to other issues of national concern, such as security, education, or health. Although it is receiving increasing attention, this attention has yet to be translated into concrete actions. Additionally, coordination among authorities overseeing public transport is weak and sometimes non-existent.

- **Active Transport Modes:** There is a clear deficiency when it comes to the planning and implementation of other sustainable modes of transport such as walking, cycling, and smart mobility. There is a clear deficiency in the infrastructure that would allow such active modes of transportation, as evidenced by the narrow sidewalks, lack of pedestrian boulevards, and lack of cycling routes.

- **Road Safety:** The high rates of transport accidents, injuries, and deaths (mainly road accidents) constitute a challenge for this sector and the for the country. This is aggravated by:
  - Large growth of vehicles ownership.
  - Aggressive driving behavior.
  - Lack of safe roads design and routine maintenance.
  - Poor protection for pedestrians.
  - Driving without a driving license still widespread.

- **Environmental Impacts:** Similar to most countries, air pollution resulting from the transport sector is considered one of the largest sources of pollution.

- **Professional Capacity:** In some cases, government bodies overseeing the transport sector lack qualified technical and professional staff to lead comprehensive planning initiatives in the sector. More specifically, the sector suffers from:
  - General weak capacity of professionals in the transport sector, especially at the planning level.
  - Lack of knowledge and expertise in the field of transport and mobility.
  - Lack of interest from authorities in training and capacity building.
  - Insufficient awareness and understanding of transport and mobility planning tools.
  - Poor interest and investment in Research and Development (R&D) to solve chronic transport and mobility issues.
  - Lack of interest and poor availability of transport and mobility data to assess and guide transport and mobility planning decisions. If available, data is usually outdated, fragmented, and not comprehensive enough to fully understand and analyze the transport and mobility issues to allow for meaningful and evidence-based decisions.

3.6 COVID-19 IMPACT

According to a recent World Bank report, Jordan's economic growth slowed to 1.3% in the first quarter of 2020, only partially reflecting the impact of the COVID-19 pandemic. Timid growth during the first quarter was the result of an improvement in net exports and the marginal contribution of government consumption, while overall economic activity remained constrained by weak private demand and muted government investments.

Meanwhile, labor market indicators for the second quarter of 2020 reflect the significant disruptions of the COVID-19 crisis. The already-elevated unemployment rate has risen to 23% in Q2-2020 compared to 19.3% in Q1-2020, while the labor force participation rate dropped by 0.4% during this period. Looking ahead, the pandemic will have as disruptive an impact on the Jordanian economy and its prospects as it is having on Jordan's trading partners and the MENA region as a whole; its gradual recovery over the medium-term could capitalize on lower oil prices and a steady momentum for reform to increase efficiency and boost productivity.

At the fiscal level, the pandemic is exacerbating the fiscal deficit as revenue collection has subsided given the economic slowdown and domestic lockdown measures. Although the government has created savings by curtailing the public sector wage bill, pandemic - related spending pressures and recurrent spending rigidities are limiting Jordan's ability to confine the deficit. As a result, the overall central government's fiscal deficit (including grants and the use of cash) widened to 4% of the GDP during the first five months of 2020, almost twice as high as during the same period in 2019. The sharp deterioration in government finances, together with the slowdown in economic growth, has increased levels of public debt in central government (including debt holdings of the Social Security Investment Fund) to 105.3% of forecasted GDP at end-May 2020. In the medium-term, the fiscal stance is expected to improve once economic activity gradually recovers.

As for the external sector, the current account deficit (including grants) narrowed by 6.3% year-on-year during Q1-2020. For Q2-2020, an initial build-up of external sector pressure was alleviated, whereby exports and imports returned to positive growth in June, following contractions in April and May 2020. Remittance inflows, on the other hand, remained negative throughout the second quarter, while the suspension of commercial flights prevented any inflows of travel receipts. Although the decline in international oil prices will support a lower import bill, the current account deficit is expected to widen significantly in 2020 due to subdued external demand and its spillover effects on the domestic economy through a decline in exports, remittances, travel, and foreign investments.

When it comes to transport and mobility, the pandemic's impact has been significant, if not catastrophic, across the world. Road traffic has fallen drastically internationally. Furthermore, the public transport and aviation sectors have been hit hard since March 2020, due to restrictions on travel as well as frequent and long periods of lockdown. Social distancing measures have resulted in suspending or reducing operations, while, at the same time, people are shying away from the use of "group transport" alternatives such as public and air transport.

Nevertheless, there is no denying the fact that air quality has improved substantially across the globe due to the reduced emission of air pollutants from the transport sector. There has also been a significant drop in casualties from road traffic accidents. In many cases, governments around the world restricted all modes of travel while only allowing people to walk or cycle to ensure acceptable social distancing and discourage long trips away from home. Therefore, these micro-mobility alternatives became more practical and appealing to people, especially in comparison to public transport or even private cars. For example, shared bike use has doubled in many cities compared to pre-pandemic levels (ITF COVID-19 Brief, 2019).

Even as the COVID-19 pandemic seems to be coming to an end, it is expected that life will not return to business-as-usual in the very near future, especially for the transport sector since measures and mitigation efforts will likely remain in place to try to control the spread of the virus.

In particular, maintaining social distancing on "group transport", such as public, air, and maritime transport, is expected to continue for some time (perhaps even beyond the end of the pandemic), whether mandated by the governments to control the spread or practiced by travelers themselves to protect themselves. This poses a very tangible dilemma to the future of group transport, as a significant worrying consequence to the pandemic would be for people to shy away from public transport in their daily commute and rely more on owning and using private transportation. That would not only shatter the public transport industry worldwide, but would also worsen congestion and air pollution levels, leading to an unsustainable way of life.

Accordingly, governments should learn from the impacts of this pandemic to develop and establish the necessary strategies and measures to make group transport (mainly public transport)—and its supportive active modes of transport such as walking and cycling—more resilient and agile in dealing with this pandemic and any similarly unforeseen events in the future.

In the context of Jordan, such measures could include:

- Invest in infrastructure for safe walking and cycling (wider sidewalks, safer pedestrian connections, more traffic calming measures, creation of pedestrian boulevards, bicycle lanes, etc.).
- Encourage and incentivize travelers to use micro-mobility through sponsorships.
- Encourage and incentivize the use of public transit by offering more optimized operations that focus on more frequency, less crowding, better quality of service, and safer / convenient connections to active modes of transport.
- Expedite the investment decisions in public transport, specifically focusing on enhanced services such as urban and intercity rail lines and BRT projects.
- Accelerate the implementation of smart technology in the transport sector, including Automatic Fare Collection, Advanced Traffic Management, Vehicle Tracking, Passenger Information Systems, and Shared Mobility.

Downtown Amman, Jordan © UN Habitat (2021)

- Enhance and streamline the coordination between the major stakeholders in the transport sector to plan, design and implement integrated solutions.
- Enhance the monitoring capabilities of transport agencies to be able to act fast when needed (for example, restricting car travel on certain days).
- Capacity Building:
  - The JNUP is an opportunity to fill the current knowledge and capacity gap in the transport and mobility sector. This can be done through training governmental/institutional staff on transport and mobility planning principles and the techniques needed to prepare their own transport master plans, in alignment with the government's visions and plans.
  - Universities in Jordan have started to offer specialized programs in transport planning and engineering that can be utilized in uplifting the capacities of local agencies. Collaboration schemes between the universities and government authorities should be explored to enhance the capacity of staff.
  - JNUP is an excellent opportunity for stakeholders in the transport sector to make proper use of technical assistance offered by international donor agencies, such as UN agencies, the World Bank, GIZ, JAICA, and more.
  - Research and Development (R&D) can be a factor in solving transport and mobility issues. This can be done through practical training courses in the field and learning from the best practices around the world.
  - The JNUP clearly addresses the importance of an accessible spatial data platform shared among the stakeholders to harmonize and enable spatial decisions. This similarly applies to transport data, where a unified and continuous program of data collection, archiving, and analysis can be implemented to support the analysis and decision-making process.

The financial implications of such measures should be a governmental priority as this pandemic may be an "opportunity" to begin planning and designing for smart, greener, and more sustainable cities.

3.7 RATIONALE FOR MAINSTREAMING TRANSPORT AND MOBILITY

As cities and urban areas continue to grow, commuting and daily travel is expected to grow as well. Cities and communities have traditionally responded to growth in mobility needs by expanding the supply of transportation, whereby roads and highways were typically sought as the main solution to traffic congestion and growing travel needs. Although transport and road planners tried to distinguish between "main roads" and "streets", cities ended up designing streets the same way they design roads, focusing on serving the private car rather than catering to and designing for all road users. The difference between main roads and streets is that main roads are designed to move economy and encourage longer distance travel, while communities, business centers, and areas of attractions need streets, which can be considered as places to be created with people-focused design for a better quality of life and more sustainable living.

Furthermore, even though different branches and authorities of the Jordanian governments have been developing and implementing initiatives and projects to upgrade and enhance the transport and mobility sector in Jordan, the sector still needs further and more elaborate efforts to cater to the increasing transport demand of passengers and goods as well as to provide the necessary connectivity requirements for the growing urban areas and developing parts of the country. At the same time, the COVID-19 pandemic, and the resulting impact on travel behavior, has limited different entities abilities to respond to the aforementioned transport and mobility challenges, at least in the short/medium terms. Therefore, without proper and strategic interventions, the unreliability, delays, and frustration will increase, thus impacting people, business activities, and, ultimately, negatively affecting economic conditions in the country.

The challenges that the transport sector is facing—as previously described in this guide—require a multimodal approach towards transport sector reform, within which each mode contributes to the achievement of the final goal of establishing and maintaining a transport sector that supports the economy and the people of Jordan. Such multimodality requires coordination between different modes and cooperation between different transport authorities.

Working towards achieving this, Jordan has, as aforementioned, been developing some projects and initiatives to improve the transport and mobility systems that are meant to enable a more integrated and sustainable transport options, including investing in mega transport projects such as Queen Alia Airport, Aqaba port and Amman and Amman-Zarqa BRT. Additionally, the GoJ has prepared a Transportation Strategy in 2012 and is currently updating it. The strategy focuses on the multi-modality and inter connectivity of all transport modes. It gives direction to reduce pressure on the road sector by introducing new modes of transport for freight (railways and pipelines) and to revitalize the public transport sector. The 2012 strategy supported the integration of Jordan in the region through a new railway network within the multimodal Red Sea – Black Sea "land bridge" transport corridor, but this was suspended due to the war in Syria.

Therefore, there is a need to enhance and upgrade the current transport and mobility systems in the country, especially public transport, and other sustainable modes of transport, to enable well-balanced and resilient urban planning in the country. As has been displayed throughout this section, establishing resilient, inclusive, and accessible transport and mobility cannot be done without proper integration with urban planning; hence, mainstreaming transport and mobility in the JNUP becomes a necessity.

Accordingly, there are several opportunities that present themselves to improve the transport and mobility sector within the framework of the national urban agenda, including:

- Capitalizing on the JUNP to develop policies that integrate urban planning with transportation planning, especially for new developing areas.
- Capitalizing on the JUNP to develop policies and guidelines that promote and put provisions for sustainable and active modes of transportation.
- Building on the current BRT projects to create an integrated transport system in Amman and Zarqa, which enables multimodal transportation system operation.
- Improving the connectivity between resource-base and demand-base cites and improving urban rural linkages through the introduction of mass transportation for passengers and freight (i.e., rail roads).
- Improving air transport potential by upgrading Marka airport to support Queen Alia International Airport, thus increasing the number of domestic, regional, and international flights to/from Amman, which would ultimately result in boosting the economic growth and trade in the country to appropriately correspond with the population growth.
- There is a significant opportunity to enhance public transport in major cities in the country through the implementation of traditional systems (BRT) or innovative systems (for example, ridesharing, demand-responsive public transport, or aerial transportation systems such as gondolas).
- Increase the convenience of public transport users through the introduction of a National Automated Fare System.
- The emergence of hybrid and electric motorized vehicles in public and private transport would minimize emissions and enhances the components of green cities.
- Innovative methods of financing, such as Private Public People Partnership (PPPP) modules, should be further enhanced to attract investments in building and operating transport systems (such as in the case of Queen Alia Airport and soon in the Amman BRT).

4 MAINSTREAMING TRANSPORT AND MOBILITY: THE JNUP PROCESS

4. MAINSTREAMING TRANSPORT AND MOBILITY: THE JNUP PROCESS

As presented earlier in this thematic guide, the JNUP goes through five (5) phases: feasibility, diagnosis, formulation, implementation, as well as monitoring and evaluation. These phases do not present separate or isolated stages of work, but rather a comprehensive and integrated process where all phases are interdependent and, as such, any failure during the process will lead to shortcomings in the overall NUP process.

Hence, in order to mainstream transport and mobility into the JNUP, the suggested transport and mobility policies that will be discussed in section 5 would need to be integrated and aligned with the JNUP phases. This section thus considers which set of relevant actions need to be taken under each phase and pillar to achieve the overall objective of integrating transport policies into the JNUP.

4.1 FEASIBILITY PHASE

As per the "Mainstreaming Transport and Mobility in NUP", the feasibility phase creates a case for the need of a policy, by assessing the existing legal, institutional, and stakeholder capacity and interactions in policy formulation and implementation.

In this respect, ***the contextual analysis included in section 3 of this guide, as well as the opportunities and challenges presented in the same section, provide the necessary understanding of the existing legal, institutional, and stakeholder setup of the transport sector and its relation to urban planning to be able to formulate the necessary polices and mainstream them into the JNUP.***

Transport issues are fundamentally tied to urban planning and polices at all stages starting from the planning stage. Hence, given the stakeholder mapping process that was presented in section 3, the feedback / input of some stakeholders with regards to transport and mobility issues, as well the challenges and opportunities that were identified in the transport sector, a case was made for mainstreaming transport into the JNUP.

Therefore, in line with the Feasibility Phase of the JNUP, this thematic guide provided the following items for the transport and mobility sector:

- Mapping and analyzing relevant parts of country's institutional landscape (government and non-government actors).
- Collecting available data, statistics, reports, etc. that document the prevailing transport and mobility conditions in the local context, with a summary of gaps and priority areas.

4.2 DIAGNOSTIC PHASE

The diagnostic phase in the JNUP focuses on collecting relevant background data and information on urban policy, which will be organized and analyzed for informed decision making. Data was collected, collated, and analyzed on sustainable transport and mobility to ensure decision making is pragmatic and evidence based. The information collected in this guide eases decision making on adopting sustainable transport and mobility options at national and local levels.

Accordingly, in line with the Diagnostic Phase of the JNUP, this thematic guide provided the following items for the transport and mobility sector:

- Formulated a context-specific definition of sustainable transport and mobility at the requisite planning level, with an indication of local considerations that are relevant to achieve sustainable transport and mobility.
- Conducted research into sustainable transport and mobility to inform sustainable transport and mobility decision making.
- Carried out an analysis of transport and mobility infrastructure provision to ascertain the condition of infrastructure to use and identify deficiencies.
- Reviewed relevant national, sectoral, sub-national, and local level urban-related documents to assess the level of consideration given towards transport and mobility. This included international, national, subnational, and local policy, legal and regulatory documents, government reports, sectoral reports, project documents, as well as other documented information on transport and mobility.
- Promoted the use of new technologies in capturing and analyzing information on sustainable transport and mobility.
- Identified cross-cutting issues (e.g., gender) that could be mainstreamed into the urban policy process regarding sustainable transport and mobility. Case studies were used to exemplify mainstreaming of these issues in urban policy.

4.3 FORMULATION PHASE

Formulation of the JNUP entails the actual policy development period. Policy recommendations were made, based on outputs of the feasibility and the diagnostic phase. Mainstreaming transport and mobility in the JNUP was based on a clear set of goals, objectives, and actions that are practical, feasible, implementable, and with clear performance indicators that can inform monitoring and evaluation.

A clear understanding of the role and ability of every stakeholder was developed to comprehensively consider all inputs and have an all-encompassing policy document. This understanding has built consensus on contentious issues, addressed competing interests in policy, and helped develop priority areas on transport and mobility interventions.

In line with the Formulation Phase of the JNUP, this thematic guide provided the following items for the transport and mobility sector:

- Formulating a transport and mobility vision for the country.
- Defining the prioritization of transport and mobility in the national or local development agenda to gather traction for its inclusion in the respective urban policy.
- Conducting capacity building for stakeholders to improve the quality of inputs on transport and mobility.
- Developing frameworks that will guarantee coordination of local authorities or national agencies in realizing sustainable transport and mobility, with roles, responsibilities, and expected outputs defined.
- Aligning the local or national sustainable transport and mobility targets to international best practices.
- Supporting national and local authorities to identify the potential funding stakeholders and mobilizing resources for development of transport and mobility infrastructure.
- Reinforcing the role of public-private partnerships (PPP) in realizing transport and mobility and streamline institutional coordination to enhance transparency and efficiency in financing and managing transport and mobility infrastructure. This will improve investor confidence in transport and mobility projects.

4.4 IMPLEMENTATION PHASE

Policy implementation is the translation of policy intents into actions. Actual projects and programmes are actualized on the ground to realize a physical impact. Transport and mobility rely heavily on infrastructure as most flows are physical. Implementation of transport and mobility policy suggestions thereby shifts intent into action. This stage of the NUP requires coordination as well as administrative and legal measures to ensure effective implementation of the policy vision, within a specified timeframe.

In line with the Implementation Phase of the JNUP, this thematic guide provided the following items for the transport and mobility sector:

- Allocating transport and mobility implementation roles and responsibilities to relevant stakeholders, with clear timeframes and defines scopes of engagement. This included coordination mechanisms through a framework to promote delegation and devolution, reduce conflicts, and duplication of effort.
- Prioritizing the implementation of integrated sustainable transport and mobility solutions that have an impact in realizing the SDGs and targets.
- Developing implementation plans at the national, subnational, and local level and, accordingly, encouraging cities to achieve them in order to promote integrated transport and mobility.
- Building the capacity to enhance ability to implement transport and mobility projects.
- Mainstreaming the adoption of local knowledge and the adaptation of international best practices in transport and mobility to promote local identity, culture, and design of transport infrastructure, while additionally adapting to proven success.
- Prioritizing local authorities and national governments in adopting transformative projects in transport and mobility that would aid achievement of SDGs and the NUA.
- Prioritizing and overseeing the shift in policy, organizational, legal, and fiscal frameworks to mechanisms that will promote the implementation of proposed transport and mobility projects and programmes in the newly mainstreamed policy.

4.5 MONITORING AND EVALUATION PHASE

Monitoring and evaluation entail a continuous assessment of an activity against set baseline targets (activities, principles, and guidelines), to check for compliance or deviation from the intended objectives. In mainstreaming transport and mobility into the JNUP, this process will entail laying down a clear set of objectives and attendant indicators that will be used to gauge effectiveness of formulation and implementation outcomes of the JNUP. Evaluation surveys and progressive assessments can be used to gather information to be benchmarked against indicators, helping to assess the level of implementation as well as the consequent impact of implemented activities on the target population and environment. This includes using perception surveys, network assessment surveys, transport surveys, and other spatial information as shall be deemed relevant. This phase offers opportunities to learn from implemented activities, to aid modification of transport and mobility interventions so that the end aim is achieved.

This process could serve as an inspiration to stakeholders to promote given measures that have the greatest desired impact or change measures with low or negative benefits to the intended society. In transport and mobility, these targets ought to be based on SDG target 11.2, which aims at attaining “access to safe, affordable, accessible, and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons by 2030”.

Therefore, in line with the Evaluation and Monitoring Phase of the JNUP, this thematic guide provided the following items for the transport and mobility sector:

- Developing a set of baseline targets and indicators to use as performance indicators in assessing the mainstreaming of transport and mobility in the JNUP.
- Establishing a comprehensive monitoring and evaluation methodology for sustainable transport by national and local governments.
- Taking regular (in some cases annual) stock of progress toward transport goals within national and local governments and adjust policies and practices in response to the lessons learned with the objective to drive continuous improvement, focused on society’s needs.
- Building monitoring and evaluation capacity for transport and mobility in governments at all levels, including through the sharing of lessons learned, best practices, training, and guidance of international and civil society organizations and business.
- Institutionalizing and continuously monitoring the mainstreaming of transport and mobility in urban policy and, accordingly, monitoring the outcomes of project implementation through the assessment of indicators, analysis of project reports, surveys, as well as regular meetings with core team members and key stakeholders.
- Allocating resources for data collection, analysis, and reporting on transport and mobility in the JNUP, using mixed monitoring methods (qualitative and quantitative) to enhance procurement of comparable data on transport and mobility projects, impacts, infrastructure use, and concerns.

4.6 MAINSTREAMING TRANSPORTATION AND MOBILITY POLICIES INTO THE JNUP CROSS-CUTTING PILLARS

As discussed earlier in this guide, the JNUP has three cross-cutting pillars that should be integrated into the five phases of any NUP process, specifically capacity development, participation, and acupuncture projects. These pillars take place in all the NUP stages to contribute to a sustainable and effective urban policy. The following illustrates the ways in which transport and mobility should be mainstreamed into these pillars.

4.6.1 CAPACITY BUILDING IN TRANSPORT AND MOBILITY

As explained in Section 3, stakeholders were asked to assess the level of professional capacity of the stakeholders / authorities managing the transport sector in Jordan. In the stakeholders' opinion, there was a lack of professional technical capacity and expertise in some key transport domains to lead comprehensive planning initiatives in the sector, while, in other domain areas, the professional capacity existed but was not utilized. Therefore, capacity building for transport stakeholders at all levels is paramount and should aim at raising and expanding the skills and knowledge of the various JNUP aspects and their relationship to transport and mobility. This should be done through the assessment and development of human, financial, and institutional capacity, so that managers and participants in the JNUP process are adequately equipped to produce an adaptive and responsive JNUP. Deficiency in knowledge and capacity in transport and mobility have led to the current unsustainable transport trends in Jordan and, without enhancing the knowledge and professional capacity of stakeholders in this area, it would be difficult to come up with sustainable interventions that could address transport challenges in the JNUP.

Mainstreaming transport and mobility into the JNUP capacity development pillar is a multilevel and multi-stakeholder process and requires the engagement of all relevant stakeholders at different stages. Multilevel capacity building requires a capacity needs assessment of various stakeholders to ensure relevant, targeted, and effective capacity building. A partial, high-level capacity assessment was undertaken as part of the development of this guide. However, a more detailed capacity needs assessment needs to be undertaken at the local, regional, national scales, to avoid replication of effort and ensure better communication, information collection, management, and dissemination of information.

Capacity building provides a platform for incorporation of various forms of information, communication, and technology. The harnessing of local knowledge on transport and mobility would be useful in aiding the final products of the process, which includes the adaptation of infrastructure to meet local needs and practices. Capacity building of key stakeholders in the transport and mobility sector will ultimately enhance the long-term knowledge of transport and mobility and could additionally enhance future engagements on urban policy and the development of regulatory and legal instruments to govern the JNUP implementation.

In this respect, a Transport and Mobility Capacity Building Program can be initiated to help the sector in building capacity in sustainable transport and mobility practices. This can be achieved through the following action plan.

Table 2: Transport and Mobility Capacity Building Action Plan

Action Plan Title	Transport and Mobility Capacity Building
Rationale	-Lack of capacity in transport and mobility planning in government agencies - especially sustainable transport planning - have led to unsustainable urban and transport trends. -The JNUP is an opportunity to fill the current gap and train governmental institutions' staff on sustainable transport and mobility planning principles.
Objectives	-Fill the current gap and train governmental institutions' staff on sustainable transport and mobility planning principles and the techniques needed to prepare their own transport master plans in alignment with urban planning. -Promotion of effective and sustainable transport and mobility within urban planning. -More integration between urban and transport planning, resulting in more compact and resilient human settlements and developments.
Description of what will be done	-Capacity assessment of government staff in transport and mobility planning. -Creating a suitable environment for training and capacity building in the transport and mobility sector, with special focus on the planning of sustainable transport strategies and integrating them into urban planning.
Steps for Implementation	1) Choose the right location and place for establishing the training center. 2) Define the right budget for the project. 3) Propose the needed capacity for the training center. 4) Obtaining the appropriate financing for the project. 5) Start establishing the center. 6) Launching the project.

Action Plan Title	Transport and Mobility Capacity Building
Policy Owner	MOT and/or MoLA
Stakeholders	MOPWH, MoLA, MOI, Municipalities, GAM, ASEZA, academia, and the private sector.
Financing options	-MoLA budget -MOT Budget -World Bank -UN agencies -Other donor agencies.
Expected Impact	-Transport and urban planners in public authorities can prepare their own integrated and sustainable master plans. -Government agencies have inhouse staff that can develop solutions and concepts to integrate transport and land use planning at the local, regional, and national levels. -Integration of sustainable transport within urban planning is achieved.
Timeline	June 2021 - June 2022
KPIs	-Number of trainees per course per city. -The spatial distribution of the trainees over the Kingdom.

Considering the above, some of the training courses that could be provided as part of this capacity building action plan may include:

- Transport Planning Fundamentals.
- Transport and Urban Planning.
- Sustainable Transport Planning.
- Public Transport Planning and Design.
- Intelligent Transport Systems and Technologies.

4.6.2 PARTICIPATION IN TRANSPORT AND MOBILITY

Participation entails the inclusion of all stakeholders engaged in sustainable transport and mobility in the policy formulation, implementation, monitoring, and evaluation. Participation should involve all relevant levels of actors at the international, national, regional, and local scales. It is also a multi-stakeholder process where actors in government, civil society, private sector, academia, industry, and affected communities are engaged in the development, implementation, and monitoring of various transport and mobility policy options. Through direct and indirect engagement, decision making ensures that stakeholder input is considered, raising public acceptability of transport and mobility policy recommendations as well as improving the success rate of the JNUP. Participation should last throughout the JNUP process as a knowledge exchange platform between the JNUP development experts and other stakeholders, thus enhancing the JNUP publicity and enhancing information exchange between stakeholders and consensus-building. It gives an equal platform for marginalized groups in society, such as the disabled, poor, women, and youth to engage in the policy process and reducing occurrences of exclusion.

In this respect, a Transport and Mobility Participation Action Plan is provided below to ensure participation of the public in the development of sustainable transport and mobility policies.

Table 3: Transport and Mobility Public Participation and Awareness Action Plan

Action Plan Title	Transport and Mobility Public Participation and Awareness
Rationale	-Enhancing the JNUP and sustainable transport publicity. -Enhancing information exchange between stakeholders and consensus building. -Giving an equal platform for marginalized groups in society such as the disabled, poor, women, and youth to engage in the policy process and reducing instances of possible exclusion.
Objectives	-Inclusion of all stakeholders engaged in sustainable transport and mobility in the policy formulation, implementation, monitoring, and evaluation. -Raising public acceptability of transport and mobility policy recommendations and improving the success of the JNUP.
Description of what will be done	Develop and promote public awareness campaigns and education programs to inform and engage people of all ages about the importance and benefits of sustainable transport mobility and the actions being undertaken by the government to promote sustainable and equitable transport

Action Plan Title	Transport and Mobility Public Participation and Awareness
Steps for Implementation	1) Develop the campaign and education program mandate and scope. 2) Define the right budget for the project. 3) Obtaining the appropriate financing for the project. 4) Launch the campaign.
Policy Owner	MOT
Stakeholders	MOPWH, MoLA, MOI, Municipalities, GAM, ASEZA, civil society, private sector, academia, and the industry.
Financing options	-MoLA budget -MOT Budget -World Bank -UN agencies -Other donor agencies.
Expected Impact	Stakeholders, including those within the public, and civil society as whole can have ownership of the future planning of their communities. Providing local and contextualized feedback that helps with informed and localized plans and decisions.
Timeline	June 2021 - June 2022
KPIs	-Extent of participation. -Quality of information gathered.

4.6.3 ACUPUNCTURE PROJECTS IN TRANSPORT AND MOBILITY

Mainstreaming quick-win demonstration projects in the transport and mobility sector within the JNUP context ensures that policy action points proposed in the guide are translated into actual projects. This demonstrates to the public and other stakeholders that policy actions are implementable and can achieve the desired results. They inform cases of best practices on sustainable transport and mobility and strengthen the JNUP process as a tool for actual urban development project formulation and implementation, giving an avenue to learn of possible defects and reorientation of policy actions and priorities to make them best adapted and relevant to local scenarios.

These projects also provide an avenue of assessing the relevance of capacity building and its effectiveness in real project cases. Such projects also provide project financial commitments, allowing for healthy financial appropriations through upscaling of demonstration projects to represent the country. Adjustments to acupuncture projects ultimately inform the assessment and adjustment of the policy process and associated action points in order to realize sustainable transport and mobility outcomes in the long run.

Table 4: Transport and Mobility Acupuncture Projects Action Plan

Action Plan Title	Transport and Mobility Acupuncture Projects
Rationale	Demonstrates to the public and stakeholders that sustainable transport and mobility policy actions can be mainstreamed within the JNUP, are implementable, and can achieve the desired results.
Objectives	Quick-win demonstration projects in transport and mobility to be translated into actual projects.
Description of what will be done	-Identify and list feasible actionable quick win projects in transport and mobility that are implementable as well as aligned with the proposed policies in the guide and with the JNUP process. -Examine the capacity available to implement the policy proposals on transport and mobility (human, financial, institutional, legal, and regulatory). -Allocate timelines and financial appropriations, with a clear identification of possible funding sources and stakeholders to be engaged in the implementation. -Define an execution and evaluation framework for each quick win project to assess its success.
Steps for Implementation	1) Identify a list of feasible actionable quick win projects. 2) Define the right budget for the project. 3) Propose the needed capacity and stakeholders to undertake the project. 4) Obtaining the appropriate financing for the project. 5) Launching the project.
Policy Owner	GAM
Stakeholders	MOPWH, MoLA, MOI, Municipalities, GAM, ASEZA, civil society, private sector, academia, and the industry.
Financing options	-GAM budget -MoLA budget -MOT Budget -World Bank -UN agencies -Other donor agencies.
Expected Impact	Strengthen the JNUP as a tool for actual urban development project formulation and implementation.
Timeline	June 2021 - Dec 2022
KPIs	-Number of residents impacted. -Feedback from public on project impact and performance.

Jerash, Jordan © UN Habitat (2021)

5 HOW TO MAINSTREAM TRANSPORT AND MOBILITY INTO THE JNUP: POLICY RECOM-MENDATIONS

5. HOW TO MAINSTREAM TRANSPORT AND MOBILITY INTO THE JNUP: POLICY RECOMMENDATIONS

Given the diagnosis of the context, the challenges that the transport sector in Jordan is currently experiencing, the opportunities available, the role that sustainable transport and mobility can play in driving urban and economic growth in the country, as well as the JNUP process outlined above, policy recommendations should be proposed to ensure more sustainable mobility trends within the transport sectors, in accordance with global trends and in order to meet the needs and aspirations of citizens and authorities.

5.1 GLOBAL TRENDS IN SUSTAINABLE TRANSPORT AND MOBILITY

Across the world, the transport sector has been undergoing major transformations at different levels. These global trends are affected by several factors that are mostly driven by sustainability and technology, ranging from designing sustainable streets for all road users (integrated with and affecting urban planning and design), to how we move people and goods in a smart, integrated, and efficient manner, and to using modern and smart vehicle and mobility technologies to revolutionize the transport industry.

Within the above context, this section presents an overview of the current global trends in the transport and mobility sector and their impact and interrelation with urban planning and design, with a specific consideration of how sustainability trends and technology are affecting the planning, designing, and operating of cities and communities. Electrified and autonomous vehicles, shared mobility, and micro-mobility modes (walking, cycling, etc.) are being adopted to reduce the reliance on the private car while additionally providing alternative and more sustainable transport alternatives that will improve air quality and, consequently, improve the quality of life in urban areas by allowing for more human-scale developments and settlements. The aim of understanding, and ultimately learning from these trends and best practices, is to define practical and implementable mobility and transport policies within the context of Jordan that would support the JNUP.

5.1.1 LESS DRIVING

According to a report by the Organisation for Economic Cooperation and Development (OECD), there is a paradigm shifting trend in major cities in the developed world whereby less people are opting to drive, which is a notion known as “peak car”. This illustrates a paradigm shift towards less personal travel and towards more reliance on sustainable modes of transport. However, this paradigm shift is possible due to the availability of such options in developed countries, which is not the case in most developing countries.

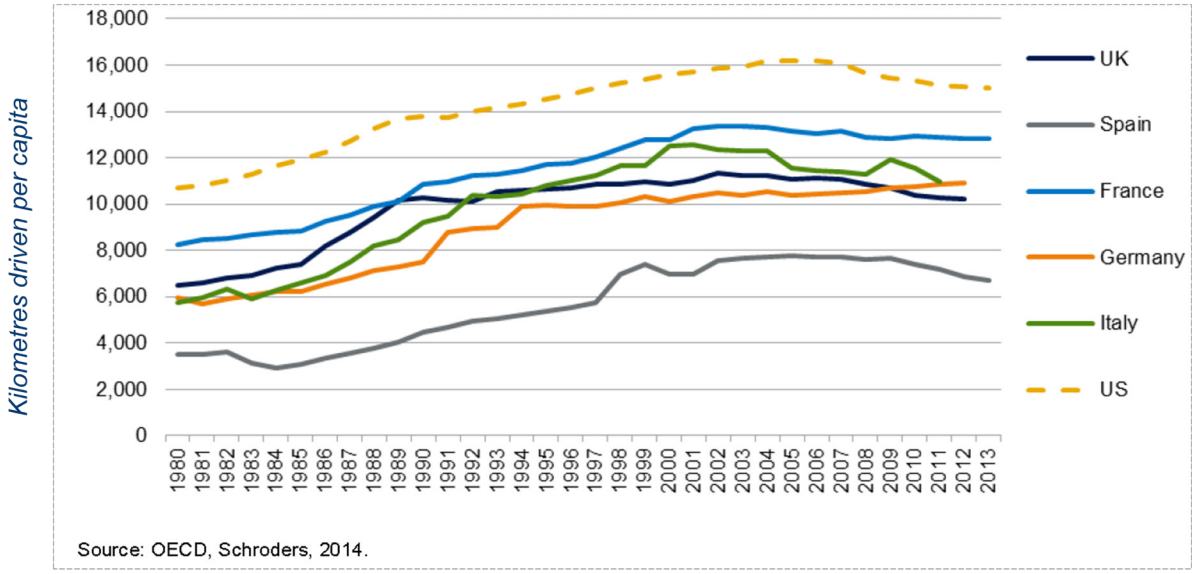

Figure 4: Kilometres driven per capita in the US and Europe
Source: Schroders: The end of the road: Has the developed world reached 'peak car'?

This trend is particularly striking, as it seems to contradict the trends that are being witnessed in developing countries (such as Middle Eastern countries, including Jordan) where young people seem to be more interested in owning cars and driving overactive or sustainable modes of transport such as walking, cycling, and public transport. This can be attributed to cultural factors, the inefficient integration of urban planning with transport and mobility planning, as well as the unavailability of suitable and more sustainable transport alternatives. Therefore, this problem should be addressed in Jordan through the integration of sustainable transport and mobility into the JNUP, especially with a consideration of the recent and continuous growth in car ownership and license plates.

5.1.2 ACTIVE STREET ENVIRONMENTS

Research and practices in various cities around the world have demonstrated that more road capacity will not necessarily result in congestion relief. On the contrary, transport planners believe that there is enough evidence clearly displaying that new road infrastructure contributes to more congestion rather than solving traffic problems, especially in the long-term. Accordingly, solutions for congestion should focus on developing livable communities through the proper integration of urban and transport planning in order to provide better access to jobs, education, and more.

In this respect, cities across the world are beginning to emphasize the importance of better street environments (through more inclusive, multidimensional, and integrated urban planning) on the quality of life of all users at all times. This focus on better street environments in relation to quality of life would economically, socially, and environmentally benefit cities and their communities. Innovative road and intersection designs are being developed and introduced to modify vehicle, pedestrian, and bicycle movements on the road network, which will accordingly provide new options to reduce car dependency, reduce delays and lost time, increase transport system efficiency, and provide safer travel for all road users. This aims to make streets more "human" by ensuring a connection between people and space within the street environment. As such, we are witnessing a global shift towards a more multi-modal system design as well as calls for Complete and Livable Streets in Urban Areas.

This approach of sustainable streets for all people and users is aligned with and allows the use of traditional micro mobility systems of walking and cycling. Such an approach makes the case for micro-mobility devices to be practical alternatives to short car trips in urban areas as well as a possible supplement to public transport service. Additionally, it is expected that user adoption for micro-mobility solutions around the world will also make significant strides in the wake of the COVID-19 pandemic and the global economic crisis since these devices enable social distancing and are readily available and affordable. In the context of Jordan, road and street design standards should be revisited in alignment with urban planning and design policies to come up with revised guidelines and standards that emphasize and require spaces for active transport modes, especially considering the dependency and favoring of cars over these active transport modes.

5.1.3 MOBILITY AS A SERVICE (MaaS)

Mobility-as-a-Service (MaaS) is a new type of transport service concept that enables users to plan, book, and pay for multiple types of mobility services through a joint digital channel. Its basic principle is a shift away from personally owned modes of transportation towards mobility provided as a service concept through the integration of various forms of transport services (provided by either public or private entities) into a single service that is accessible on demand. The key concept behind MaaS is to offer travelers mobility solutions based on their travel needs*.

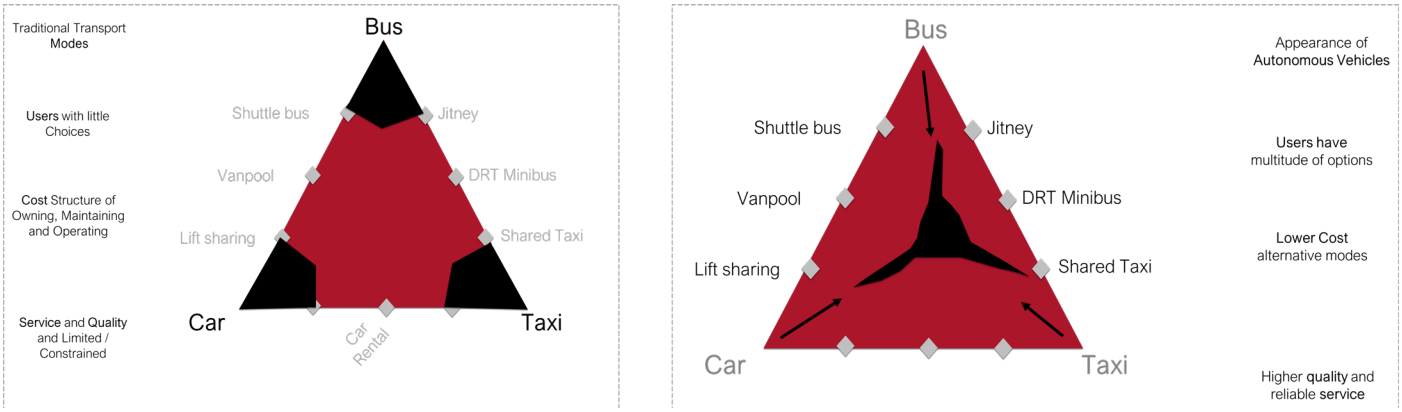

Figure 5: MaaS Diagram

The aim of MaaS is to provide a convenient, more sustainable, and possibly cheaper alternative to private cars that may help to reduce congestion and constraints in transport capacity**. Consequently, MaaS is expected to instigate a decline in car ownership while simultaneously significantly increasing the efficiency and utilization of public transport systems. It should also be noted that specialist urban mobility applications that operate in Jordan and in many countries, such as Uber and Careem, are expanding their offerings to enable MaaS.

Therefore, in the context of Jordan, the integration of transport modes to allow for more direct, shared, and smart mobility options should be taken into consideration, in alignment with the other transport and urban planning policy recommendations discussed here.

* https://en.wikipedia.org/wiki/Mobility_as_a_service#cite_note-2

** https://maas-alliance.eu/homepage/what-is-maas/

5.1.4 AUTOMATED VEHICLES AND CONNECTED CITIES

Connected cities are a game changer for cities and urban areas, as they are expected to change how infrastructure and vehicles are designed as well as how people move. Through 5G networks and advanced technologies, all vehicles and infrastructure systems will be interconnected with one another. This "smart" connectivity, which includes the use of cameras, sensors, and other devices, will provide more precise knowledge on the traffic and transport conditions across the entire road network, with a significant promise of higher safety levels and improved quality of life.

Moreover, Automated Vehicles (AV) are classified according to their level of operating autonomy, from Level 1 (providing driver assistance in limited situations, such as the automatic park-assist and adaptive cruise control features) to Level 5 (fully self-driven without human interaction, known as AV or driverless vehicles). There are currently plans for Level 4 deployment of AVs by 2025, and OEMs are heavily investing in the autonomous mobility landscape. Level 5 is yet to be confirmed and estimated to be deployed in approximately a decade due to uncertainty and regulatory frameworks.

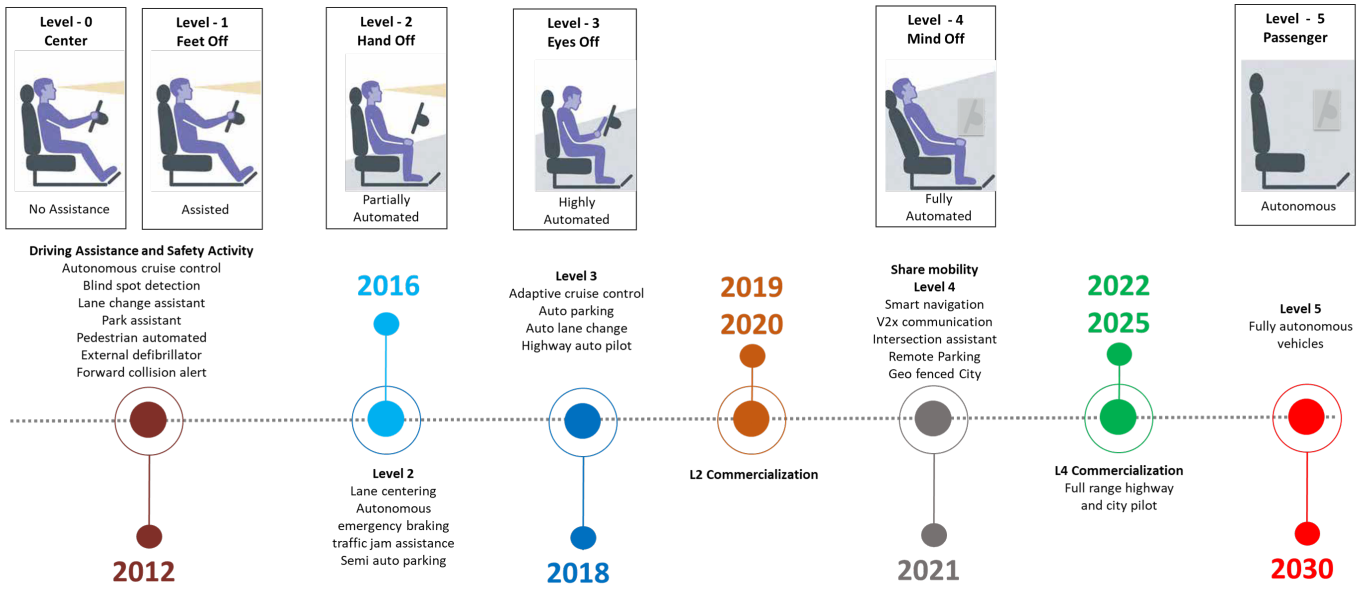

Figure 6: Development Timeline of AVs

Furthermore, new zoning requirements to accommodate autonomous car parking, taxi pickup/drop-off, bus stops, and loading/unloading zones will also be needed, as well as new travel pricing policies such as road usage charges for CAVs versus other vehicles. Such transportation policies should be developed in accordance with national urban policies to minimize any negative impacts on the urban environment while maximizing the potential benefits of new technologies and mobility models for commuters.

Additionally, first/last mile transport is also rapidly changing through automation, integration, and technology advancement. This will support further shift to more sustainable modes of travel away from the car. In the context of Jordan, this can be achieved through the integration of active and sustainable transport modes (such as cycling, scootering, etc.) with public transport service. More specifically, the provision of facilities for cycling, scootering, and other active modes for transportation for last mile service (home to public transport station or public transport station to work, university, etc.) would encourage communities to choose/use more sustainable and environmentally friendly transport services.

5.1.5 SHARED MOBILITY

Shared mobility refers to the shared use of a vehicle, bicycle, or other transportation modes. It is a transportation strategy that allows users to access transportation services on an as-needed basis. In principle, it is an umbrella term that encompasses a variety of transportation modes including carsharing, bike-sharing, ridesharing, carpools, and micro transit. Shared mobility can additionally be defined as trip alternatives that aim to maximize the utilization of the mobility resources that a society can pragmatically afford, disconnecting their usage from ownership*.

Shared mobility is having a transformative impact on many cities by enhancing transportation accessibility, increasing multimodality, reducing vehicle ownership and vehicle miles traveled (VMT) in some cases, and providing new ways to access goods and services. The Shared Mobility Principles provide a clear vision for the future of cities and support the affiliations and partnerships between governments, private companies, and NGOs through the common goal to make cities more livable**.

Furthermore, shared mobility has become a ubiquitous part of the urban transportation networks, encompassing a variety of modes ranging from public transportation, taxis, and shuttles to carsharing, bike sharing, and on-demand ride and delivery services. Shared mobility directly influences and is influenced by most facets of urban planning, from its influence on travel patterns through modal choice and vehicle occupancy, to land use-related planning, in particular.

Accordingly, within the Jordanian context, shared mobility is already adopted at the level of app-based taxi services (Uber, Careem, etc.), which shows that Jordan is going in the same direction as other countries around the world. This trend should be studied in the context of Jordan to assess what impact it had (if any) on travel patterns, and whether it had any impact on urban planning.

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* *Soares Machado et al. An Overview of Shared Mobility, 2018.*

** https://www.intelligenttransport.com/transport-news/64963/shared-mobility-principles-signed/

5.2 PROMOTING SUSTAINABLE TRANSPORT AND MOBILITY IN THE JNUP

As mentioned above, this thematic guide supports the JNUP by defining the policies that would enable Jordan to move towards more sustainable transport and mobility systems, with a specific focus on encouraging and promoting public transportation, active transport modes, and smart transport technologies. The promotion of these sustainable transport systems enhances the urban agenda through the integration of sustainable transport strategies within the urban planning and design guidelines, land developments guidelines, and urban codes. As will be explained later in this guide, mixed land use planning, Transit-Oriented Developments (TODs), and other transport policies are meant to support human settlements by providing alternative, cheaper, and more convenient transport options for communities to ensure their abilities to reach employment opportunities, education, and other activities. For example, mixed land use developments allow for shorter trips, less reliance on the car, and proximity to jobs and education.

A national policy framework would enable the realization of a sustainable transport system in the country, which might include policies for improvements in traffic management, introduction of new public transportation, implementing parking policy measures, harnessing new technologies, etc. This framework would also account for the impacts of and interdependencies with new developments, like housing development (new construction and renovations), changes in allocation of workplaces, creation of new commercial centers, and changes in infrastructure.

The formulation of the JNUP should consider policy recommendations for transport and mobility that would have a direct and positive impact on human settlement through integration, alignment, and shared efforts, as well as utilizing and optimizing existing resources to support the future planning or urban areas(UN-Habitat, 2016), especially for mainstreaming transport and mobility into NUP (UN-Habitat, 2019; UN Habitat, 2020). The NUP consists of three thematic areas (urban legislation, urban economy, and urban planning/design) based on three key pillars (capacity building, participation, and acupuncture projects).

To put this in practical terms, if a transport policy is to promote the use of a certain technology, then:

- A legislative framework needs to be available to regulate the use of this technology.
- Required infrastructure for this technology needs to be provided ensure proper integration with the urban environment.
- Proper mechanisms for financing, implementation, and monitoring need to be put in place.
- Capacity building in the public sector may be required to enhance capabilities.

In this respect, Jordan crucially needs a comprehensive transportation planning framework integrated within the JNUP, to drive more sustainable, resilient, and compact developments and settlements, where access and connectivity to jobs, education, and resources can be improved, adverse impacts of transport on environment and health can be mitigated, and institutional and legislative frameworks are better aligned and coordinated.

The choice of framework for Jordan should therefore address existing deficiencies in the transport and mobility sector (as explained in earlier sections), especially their direct impact and interdependences with urban planning, and should be aligned with the New Urban Agenda's (NUA) shared vision on 'Sustainable Cities and Human Settlements for All' which seeks to "promote age- and gender-responsive planning and investment for sustainable, safe and accessible urban mobility for all and resource-efficient transport systems for passengers and freight, effectively linking people, places, goods, services and economic opportunities" (UN-Habitat III, 2017). This is addressed in later sections where policy recommendations for the transport sector are discussed.

There are several strategies that focus on improving access, reducing social exclusion, reducing energy use, improving air quality, and reducing road accidents by applying the policies of reducing the growth of motor vehicle use and reducing energy use. Figure 9 shows the proposed framework of one of the recommended strategies as an example. The aims can be realized by the so-called "Avoid-Shift-Improve" strategy, which contains a wide range of policy options that collectively*:

- Avoid or reduce the amount of journeys/length of trips taken.
- Shift to (or preventing the shift away from) more environmentally efficient forms of transport.
- Improve vehicle and fuel technology to improve environmental efficiency.

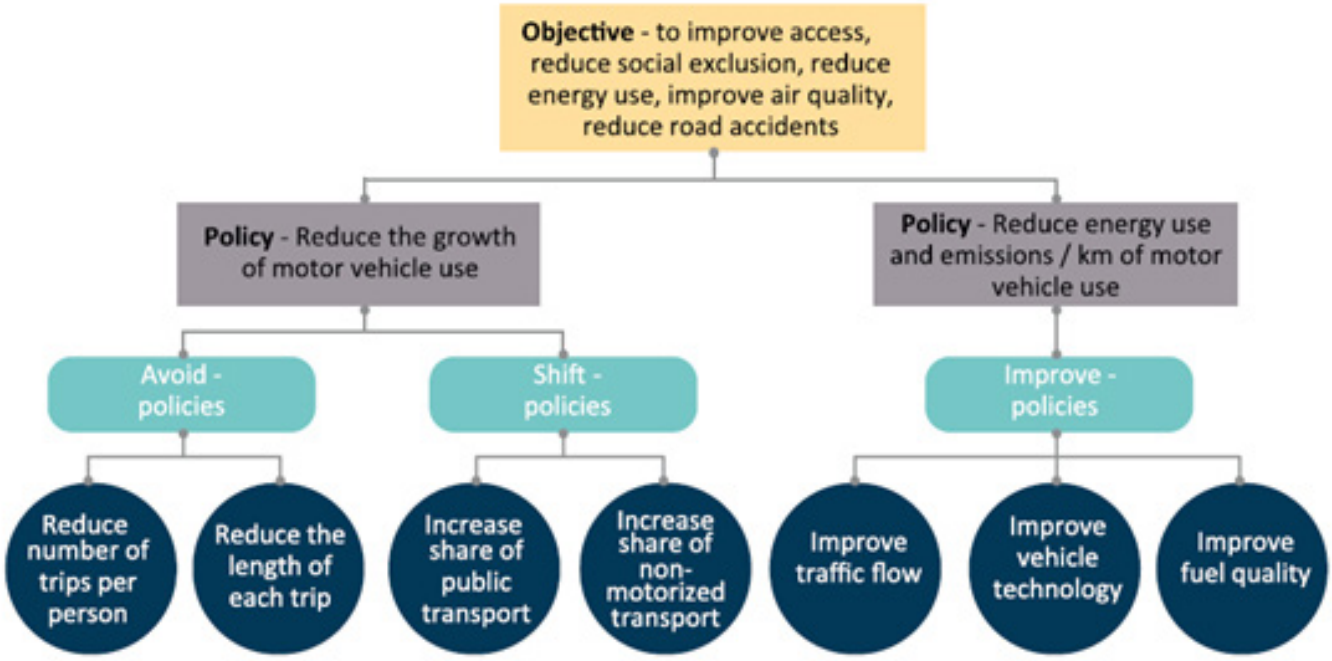

Figure 7: Avoid – Shift – Improve Strategy
Source: d Nations. 2012.Low carbon Green Growth roadmap for Asia and pacific.

Considering the above, the following sub-sections list some of the policies that can be considered / adopted by the GOJ to move towards more sustainable transport environment.

* *United Nations. 2012.Low carbon Green Growth roadmap for Asia and pacific.*

5.2.1 LAND USE INTEGRATION POLICIES

Each type of city or urban area generates unique demand patterns for transport services and mobility needs. These variations have a direct impact on the need for travel, the distances traveled, as well as on the choice of mode of travel. This, in turn, has implications on the energy consumed to meet travel needs. For example, low-density and sprawling cities (such as Amman, Irbid, and Zarqa) require longer travel distances, which, in turn, necessitate a larger share of motorized travel and higher energy consumption. Also, low density means that the demand on any origin destination tends to be low and, therefore, possibly not viable for public transport. As a result, the use of personal vehicles tends to dominate the share of motorized travel.

On the other hand, in higher density and more compact cities, trips are usually shorter and results in less dependence on motorized modes and lower energy needs. At the same time, public transport tends to have a higher share of motorized travel than in low-density areas.

In this respect, five main policy instruments that integrate urban planning with transport and mobility planning can be implemented in the Jordanian context to enable the kind of desired spatial growth in the country, in which more livable and compact human settlements and developments created.

- **Densification Policies:**

This policy focuses on permitting a more intensive use of the land, which can be achieved either by relaxing the floor area ratio (FAR) standards that local authorities in major urban areas have been adopting for decades, or by limiting holding sizes for individuals. Both policies (relaxing FAR or limiting holding sizes) would encourage more compact developments and, consequently, shorter trip lengths and more reliance on active and sustainable modes of transport. The government of Jordan should undertake studies of the existing building and ownership laws (especially in large metropolitan areas such as Amman, Zarqa, and Irbid) to assess the current practices and their deficiencies in order to develop updated laws to encourage densification policies where possible and practical. This analysis should take into consideration the anticipated (or planned) population and economic growth in the country, so that these policies become facilitators for this growth and not obstacles.

- **Mixed Land Use Planning:**

How people travel and how goods are transported in a certain urban area are heavily influenced by the kind of urban infrastructure in place. Mixed-use planning results in shorter trips as it allows for more people to live and work in close proximity. Consequently, this often allows trips to be undertaken by active and sustainable modes of transport, mainly walking and cycling, and allows for more social inclusion. Additionally, mixed land-use planning should accommodate future shared mobility facilities and services, such as shared parking, bike share kiosks, and the required communication infrastructure. Such policies avoid the problems associated with segregated land use planning, which increases trip lengths and augments the need for personal car use.

- **Transit-Oriented Developments (TODs):**

TODs are meant to support city development specifically around a public transport corridor. They allow public transport stations to become centers of local commercial activity by regrouping shopping and recreational facilities within or around stations. The implementation of TOD polices around key public transport corridors in Jordan (such as the BRT systems inside Amman and between Amman-Zarqa) enhances population densities and economic activities around public transport corridors, which, in turn, would result in public transport services becoming commercially viable, more attractive, and easier to use, while simultaneously reducing the reliance on cars.

- **Defining Urban Growth Boundaries:**

Defining urban growth boundaries for urban areas helps in making urban development more contiguous and compact. This could be achieved either by having wide green or no-development zones just outside the urban boundary of a city, or by providing utility services only within these boundaries*. The implementation of such policies in Jordan (especially in main cities, such as Amman, Zarqa and Irbid) discourages or prohibits urban sprawl, which consequently results in more compact cities, and enhanced reliance on sustainable modes of transport.

- **Nation Wide Land Use Scenarios:**

The GoJ should consider developing a nation-wide land use model (preferably developed in ArcGIS platform) to prepare and assess future national urban and land use scenarios and their associated transport system and connectivity requirements. The preparation of these land use scenarios should be in accordance with strategic nation-wide urban planning initiatives. The land use scenarios should aim at improving the connectivity between the resource and demand base, enhancing access to basic services, as well as supporting sustainable urban transport strategies that aim at reducing (the growth of) private car use and increasing the share of public transport and Non-Motorized Travel (NMT). The scenarios shall clearly reflect an integrated and holistic transportation planning for the country as well as clearly define the role of each mode of transport and NMT in any specific scenario. Moreover, the proposed scenarios should be feasible and realistic regarding their expected impacts, implementations, and financial implications. The scenarios should include clear targets for their accessibility, connectivity, modal split, and the GHG emissions reductions/levels to be achieved. One of the main evaluation criteria of the proposed scenarios should be its ability to result in a substantial growth of the share of public transport at the expense of personal car use. These scenarios should serve as a reference for comparison with any other proposed scenarios that might be developed as part of any other plans. These scenarios can serve as a basis for discussion with relevant stakeholders and can be evaluated through a strategic national transport model developed for this purpose.

5.2.2 SUSTAINABLE TRANSPORT POLICIES

Transport modes can be classified into two broad categories to meet travel needs: motorized and non-motorized. While motorized modes can be further classified into personal transport and public transport, several other subclassifications exist. Each mode of transport has unique characteristics in terms of the kind of travel demand it can best serve, the number of people it can transport, the extent of land it requires, the amount and kind of energy it consumes, the pollution it causes, as well as the capital and operating costs it requires.

Sustainable Transportation refers to any means of transportation that is ‘green’, has low impact on the environment, and is concerned with balancing our current and future needs.

* *International Bank for Reconstruction and Development. 2014. Formulating an urban transport policy.*

The figure below shows an example of transport mode classification*.

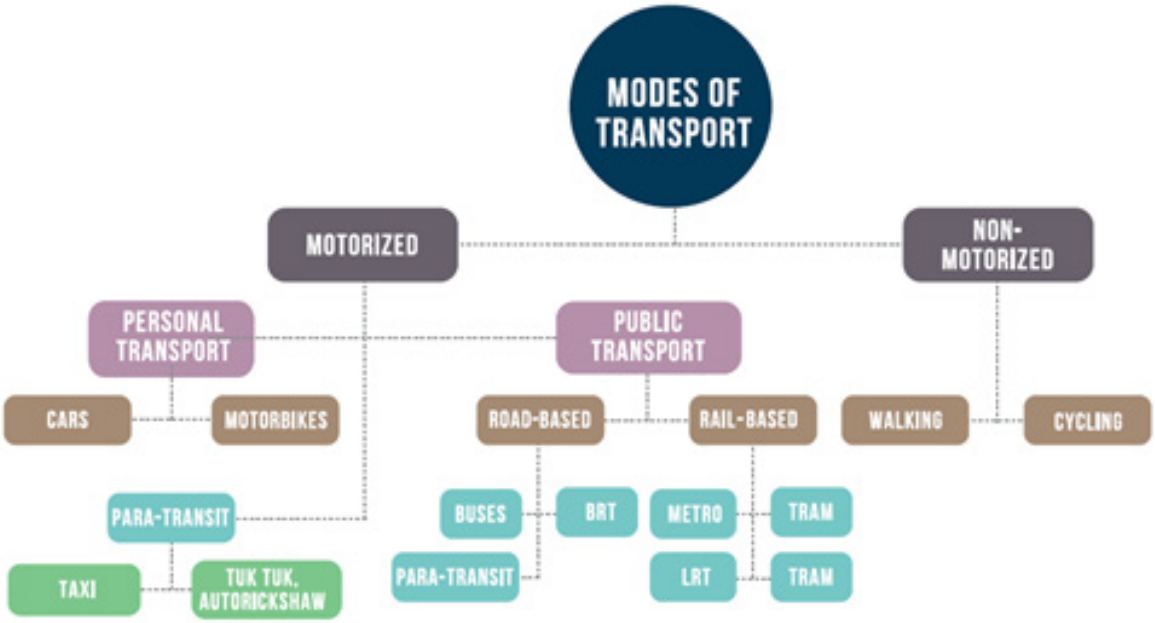

Figure 8: Classification of Transport Modes
Source: International Bank for Reconstruction and Development. 2014. Formulating an urban transport policy

Three main characteristics have a direct impact on encouraging a particular mode of transport over others:

- The right of way allocated for that mode.
- The fees charged for using the right of way.
- The extent of convenience in using the mode compared to competing modes.

When it comes to sustainable transport, good sidewalks, cycling tracks, and narrower road width for cars encourage non-motorized modes. At the same time, high parking fees or limited parking availability discourages the use of personal cars. For many users, high-quality public transport with a dedicated right of way, low fares, high frequency of service, good coverage, reliable service, a safe environment, and comfortable seating makes the mode more convenient than personal vehicles.

The benefits of using sustainable modes of transport include, but are not limited to:

- Reduced traffic congestion.
- Reduced air pollution and related risks.
- Reduced GHG emissions.
- Reduced dependence on non-renewable energy sources.
- Reduced transportation costs.
- Support for local businesses and a vibrant economy.
- Healthier lifestyles and a better quality of life.
- Increased social interaction and integration.

* *International Bank for Reconstruction and Development. 2014. Formulating an urban transport policy*

1. Pushing Demand Away from Private Car Use

Some of the policies that can be used to push users away from private car use include:

Restrict the Number of License Plates for Cars

The number of cars in developing cities is increasing rapidly, leaving cities increasingly congested, polluted, and noisy. To curb the demand for car ownership, many governments around the world are now implementing restrictions of license plates to directly control how many more cars are coming onto their roads any given year/month. Over the past decade or so, Jordan has experienced a significant growth in the number of licensed plates, the results of which can be witnessed on the road network with severe congestion occurring in main cities in the country. The implementation of a policy to restrict the number of license plates issued each year will help curb the growth of car use and encourage people to look for more sustainable alternatives such as public transport.

Parking Management

Every car journey begins and ends at a parking space. Therefore, the availability and cost of parking spaces have a direct impact on whether cars are used for a specific journey. By restricting the supply of or increasing the cost of parking, journeys made by private cars can be significantly reduced. However, this policy cannot be implemented in isolation, as people need a feasible alternative if they are required to reduce their dependence on their personal cars. Hence, such a policy should be accompanied by the implementation of good public transport services to encourage people to abandon their cars.

Promoting Car Free Urban Areas and Low Emission Zones

Cities were built for people long before the invention of the car. Hence, cities should be safe environments for people to walk and cycle in certain areas without interaction with car traffic. Around the world, cities that have kept or revitalized their car-free nature are now often the most livable and the most sustainable. Implementing such a policy in certain vibrant locations in major cities in Jordan can help reduce the dependency of cars and encourage communities to live a healthier lifestyle.

2. Pulling Demand Towards Sustainable Transport Modes

Some of the policies that can be used to pull users to sustainable modes of transport include:

Giving Priority to Sustainable Transport Modes in Road Planning

- Road planning should allow for some road space to be allocated specifically for sustainable modes of transport (such as BRT corridors, pedestrian walkways, and cycle lanes). This allows for improved public transport services (including increased frequency, faster speeds, and fewer delays) and improved user safety levels as interaction with general traffic is reduced. Additionally, infrastructure for sustainable transport modes, such as bus/train/metro stations, should enable easy access to all users, including those with mobility impairments. Ensuring good design standards from the outset also reduces further expenditures in the future, as retrofitting/redesigning old infrastructure is often more costly and technically difficult. At the same time, roads should be designed with a focus on pedestrian movement and safety, and thus develop areas to accommodate shared mobility services, such as ride-hailing pick-up and drop-off locations that are safe and convenient.

- Part of this policy has been implemented through the BRT projects currently under construction. However, policies for allocation of road space for sustainable modes of transport should be included in road design manuals and standards, to ensure that they are integral and mandatory for future road planning.

Integration of Modes to Improve Coverage, Connectivity and Convenience

Public transport in Jordan is often provided by private providers. Accordingly, such services should ideally be formalized and brought under the control of a single transport authority that is responsible for integrating the various modes of public transport so that they form part of a single system/network. This has been achieved through the LTRC to a certain extent; however, additional policies to enhance and reinforce the role of the LTRC should be put in place to allow for the LTRC to play its role meaningfully.

5.2.3 ADDITIONAL SUPPORTING POLICIES

- Invest in Technology

Smart and connected cities are a game changer for cities and urban areas, as they are expected to change how infrastructure and vehicles are designed as well as how people move. Therefore, policies for integration of smart mobility should be adopted in Jordan as they allow for optimized travel patterns and improved travel convenience. As a start, policies for the implementation of a nation-wide public transport smart fare payment system and public transport information systems are necessary to improve the image of public transport service to encourage the public to use it. In addition, consideration for the inclusion of autonomous vehicle operation, such as autonomous Bus Rapid Transit (BRT), should be considered as the world moves to smart and autonomous cars. Hence, while there are some initial attempts to adopt smart transport technologies in the country (smart payment systems, etc.), the JNUP provides the opportunity for government and relevant stakeholders to identify and undertake the required studies to assess the current status of using smart transport technologies in the country and identify the needed capacities / infrastructure required to expand the use and implementation of these technologies in the future.

- Financing Options

The government should put in place policies that support creating an attractive investment environment capable of attracting foreign capital and encouraging local investments in transportation projects. The GoJ should aim to have major transport and infrastructure projects financed through partnership with the private sector, such as in the case of the BRT projects.

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5.3 IMPLEMENTATION PHASE

Policy implementation is the translation of policy intents into actions. Transport and mobility rely heavily on infrastructure as most flows are physical. Implementation of transport and mobility policy suggestions thereby shifts intent into action. This stage of NUP requires coordination, as well as administrative and legal measures, to ensure effective implementation of the policy vision, within a specified timeframe.

In that respect, and in line with the Implementation Phase of the JNUP, the below table lists the actions that can be taken to realize the proposed policy recommendations. The table includes a qualitative assessment of the feasibility and practicality of the identified polices in the Jordanian context.

Table 5: Proposed Implementation Plan

Transport and Mobility Policy	Relevant Stakeholders	Proposed Action Plan	Timeline	Conditions for Successful Implementation
Densification Policies	-MoLA -Higher Planning Council -Municipalities	-Assess existing conditions. -Study best practices. -Develop actual densification policies.	2 years	-Proper and quick alignment between stakeholders. -Should be handled within urban planning policies. -Approval of the new relevant laws by the different government entities.
Mixed Land Use Planning	-MoLA -Higher Planning Council -Municipalities	-Assess existing conditions. -Study best practices. -Develop mixed land use planning policies.	2 years	-Proper and quick alignment between stakeholders. -Should be handled within urban planning policies. -Developing new planning guidelines and policies in a timely manner.
Transit-Oriented Developments (TODs)	-MoLA -MoT -Higher Planning Council -Municipalities	-Study best practices. -Develop TOD policies.	1 year	-TODs to be a requirement in the planning of any new high speed public transport service.
Defining Urban Growth Boundaries	-MoLA -Higher Planning Council -Municipalities	-Assess existing conditions. -Study best practices. -Develop growth boundary policies.	2 years	-Proper alignment between stakeholders. -Should be handled within urban planning policies. -Careful study of the economic and social impact of this policy. -Approval of the new relevant laws by the different government entities.
Restrict the Number of License Plates for Cars	-MoLA -MoT -MoI -Municipalities	-Assess existing conditions. -Study best practices. -Develop policies.	1 year	-Alignment between stakeholders. -Careful study of the economic and social impact of this policy.

Transport and Mobility Policy	Relevant Stakeholders	Proposed Action Plan	Timeline	Conditions for Successful Implementation
Giving Priority to Sustainable Transport Modes in Road Planning	-MoLA -MoT -Higher Planning Council -Municipalities	-Assess existing conditions. -Study best practices. -Develop policies	1 year	-Developing new guidelines and policies in a timely manner. -Get proper financing.
Integration of Modes to Improve Coverage, Connectivity and Convenience	-MoLA -MoT -Higher Planning Council -Municipalities	-Assess existing conditions. -Study best practices. -Develop policies.	1 year	-Developing new guidelines and policies in a timely manner.
Promoting Car Free Urban Areas and Low Emission Zones	-MoLA -MoT -Higher Planning Council -Municipalities	-Assess existing conditions. -Study best practices. -Develop policies.	6 months	-Alignment between stakeholders. -Careful study of the economic and social impact of this policy.
Nation Wide Land Use Scenarios	-MoLA -MoT -MoPWH -Higher Planning Council -Municipalities	-Assess existing conditions. -Study best practices. -Develop policies.	2 years	-Proper alignment between stakeholders. -Should be handled within urban planning policies. -Careful study of the economic and social impact of this policy. -Approval of the new relevant laws by the different government entities.
Parking Management	-MoLA -MoT -Higher Planning Council -Municipalities	-Assess existing conditions. -Study best practices. -Develop policies.	6 months	-Proper alignment between stakeholders. -Careful study of the economic and social impact of this policy.
Invest in Technology	-MoT -Municipalities	-Assess existing conditions. -Study best practices. -Develop policies.	6 months	-Proper alignment between stakeholders. -Careful study of the current and future needs. -Get proper financing.
Financing Options	-MoLA -MoT -MoF -Municipalities	-Assess existing conditions. -Study best practices. -Develop policies.	6 months	-Proper alignment between stakeholders. -Engage international donors and investors with solid cases.

5.4 MONITORING AND EVALUATION PHASE

Monitoring and evaluation entail a continuous assessment of an activity against a set baseline targets (activities, principles, and guidelines) to check for compliance or deviation from the intended objectives. In mainstreaming transport and mobility into the JNUP, this process will entail laying down a set of objectives and attendant indicators that will be used to gauge effectiveness of formulation and implementation outcomes of NUP. Evaluation surveys and progressive assessments can be used to gather information to be benchmarked against indicators, helping to assess the level of implementation and the impact of implemented activities on the target population and environment. This will include using perception surveys, network assessment surveys, transport surveys, and other spatial information as shall be deemed relevant. This phase offers opportunities to learn from implemented activities as well as to aid the modification of transport and mobility interventions so that the end aim is achieved.

In that respect, and in line with the Implementation Phase of the JNUP, the below table lists the actions that can be taken in the monitoring and evaluation phase:

Table 6: Proposed Monitoring and Evaluation Plan

Transport and Mobility Policy	Proposed Monitoring Activities	Proposed Evaluation Activities
Densification Policies	-Policy implementation progress compared to schedule. -Availability of relevant data.	-Time taken to develop and implement policy. -Hurdles faced. -Stakeholders and public acceptance / feedback. -Number of impacted residents. -Impact on disadvantaged groups.
Mixed Land Use Planning	-Policy implementation progress compared to schedule. -Stakeholders' interest and support. -Availability of relevant data.	-Time taken to develop implement policy. -Hurdles faced. -Stakeholders and public acceptance / feedback. -Number of impacted residents. -Impact on disadvantaged groups.
Transit-Oriented Developments (TODs)	-Policy implementation progress compared to schedule. -Stakeholders' interest and support. -Availability of relevant data.	-Time taken to develop implement policy. -Hurdles faced. -Stakeholders and public acceptance / feedback. -Number of impacted residents. -Impact on disadvantaged groups.
Defining Urban Growth Boundaries	-Policy implementation progress compared to schedule. -Stakeholders' interest and support. -Availability of relevant data.	-Time taken to develop implement policy. -Hurdles faced. -Stakeholders and public acceptance / feedback. -Number of impacted residents. -Impact on disadvantaged groups.

Transport and Mobility Policy	Proposed Monitoring Activities	Proposed Evaluation Activities
Restrict the Number of License Plates for Cars	-Policy implementation progress compared to schedule. -Stakeholders' interest and support. -Availability of relevant data.	-Time taken to develop implement policy. -Hurdles faced. -Stakeholders and public acceptance / feedback. -Number of impacted residents. -Impact on disadvantaged groups.
Giving Priority to Sustainable Transport Modes in Road Planning	-Policy implementation progress compared to schedule. -Stakeholders' interest and support. -Availability of relevant data.	-Time taken to develop implement policy. -Hurdles faced. -Stakeholders and public acceptance / feedback. -Number of impacted residents. -Impact on disadvantaged groups.
Integration of Modes to Improve Coverage, Connectivity and Convenience	-Policy implementation progress compared to schedule. -Stakeholders' interest and support. -Availability of relevant data.	-Time taken to develop implement policy. -Hurdles faced. -Stakeholders and public acceptance / feedback. -Number of impacted residents. -Impact on disadvantaged groups.
Promoting Car Free Urban Areas and Low Emission Zones	-Policy implementation progress compared to schedule. -Stakeholders' interest and support. -Availability of relevant data.	-Time taken to develop implement policy. -Hurdles faced. -Stakeholders and public acceptance / feedback. -Number of impacted residents. -Impact on disadvantaged groups.
Nation Wide Land Use Scenarios	-Policy implementation progress compared to schedule. -Stakeholders' interest and support. -Availability of relevant data.	-Time taken to develop implement policy. -Hurdles faced. -Stakeholders and public acceptance / feedback. -Number of impacted residents. -Impact on disadvantaged groups.
Parking Management	-Policy implementation progress compared to schedule. -Stakeholders' interest and support. -Availability of relevant data.	-Time taken to develop implement policy. -Hurdles faced. -Stakeholders and public acceptance / feedback. -Number of impacted residents. -Impact on disadvantaged groups.
Invest in Technology	-Policy implementation progress compared to schedule. -Stakeholders' interest and support. -Availability of relevant data.	-Time taken to develop implement policy. -Hurdles faced. -Stakeholders and public acceptance / feedback. -Number of impacted residents. -Impact on disadvantaged groups.
Financing Options	-Policy implementation progress compared to schedule. -Stakeholders' interest and support. -Availability of relevant data.	-Time taken to develop implement policy. -Hurdles faced. -Stakeholders and public acceptance / feedback. -Number of impacted residents. -Impact on disadvantaged groups.

6 WHERE DECISIONS AND ACTIONS NEED TO BE TAKEN

6. WHERE DECISIONS AND ACTIONS NEED TO BE TAKEN: PROPOSED IMPLEMENTATION AREAS OF SUSTAINABLE TRANSPORT AND MOBILITY POLICIES

The mainstreaming of transport and urban mobility, specifically sustainable transport modes, should be integrated within the urban planning policies established in the JNUP as listed below. The description of each of the transport and mobility policies is discussed earlier in this guide to ensure that its relevance, purpose, and connection to the JNUP policies is clear. In principle, each transport policy listed in the table below should be integrated and/or aligned within the relevant JNUP initiative. The way in which each transport policy can be articulated and detailed in the relevant JNUP policies is left to authorities to define based on the outcomes of the studies they will need to undertake to identify the exact transport policy measures that will fall under each JNUP policy. The following table indicates the mainstreaming transport and mobility policies with JNUP polices.

Table 7: Mainstreaming Transport and Mobility Policies within JNUP Policies

Transport and Mobility Policy	Mainstreaming within JNUP Policies
Densification Policies	-Relocate/rehabilitate existing industrial zones located within urban areas. -Establish a National Campaign to prepare/ update comprehensive urban strategic plans for all cities, regions, and villages. -Encourage the provision of smaller apartments/housing units to accommodate the needs for low and medium incomes families. -Create comprehensive, integrated, and Multi-Model Urban Mobility Plans inside cities and introduce mass transit and freight.
Mixed Land Use Planning	-Relocate/rehabilitate existing industrial zones located within urban areas. -Establish a National Campaign to prepare / update comprehensive urban strategic plans for all cities, regions, and villages. -Encourage the provision of smaller apartments/housing units to accommodate the needs for low and medium incomes families. -Create comprehensive, integrated and Multi-Model Urban Mobility Plans inside cities and introduce mass transit and freight -Upgrade and develop social, sport, and cultural activities as well as programs for youth, women, and elderly. -Integrate a mixed land use planning approach into urban planning design guideline at the neighborhood level.
Transit-Oriented Developments (TODs)	-Relocate/rehabilitate existing industrial zones located within urban areas. -Establish a National Campaign to prepare/ update comprehensive urban strategic plans for all cities, regions, and villages. -Encourage the provision of smaller apartments/housing units to accommodate the needs for low and medium incomes families. -Create comprehensive, integrated, and Multi-Model Urban Mobility Plans inside cities and introduce mass transit and freight. -Integrate a mixed land use planning approach into urban planning design guideline at the neighborhood level.

Transport and Mobility Policy	Mainstreaming within JNUP Policies
Defining Urban Growth Boundaries	-Relocate/rehabilitate existing industrial zones located within urban areas. -Establish a National Campaign to prepare/ update comprehensive urban strategic Plans for all cities, regions, and villages. -Encourage the provision of smaller apartments/housing units to accommodate the needs for low and medium incomes families. -Create comprehensive, integrated, and Multi-Model Urban Mobility Plans inside cities and introduce mass transit and freight -Integrate a mixed land use planning approach into urban planning design guideline at the neighborhood level.
Restrict the Number of License Plates for Cars	-Create comprehensive, integrated, and Multi-Model Urban Mobility Plans inside cities and introduce mass transit and freight
Giving Priority to Sustainable Transport Modes in Road Planning	-Establish a National Campaign to prepare/ update comprehensive urban strategic Plans for all cities, regions, and villages. -Create comprehensive, integrated, and Multi-Model Urban Mobility Plans inside cities and introduce mass transit and freight.
Integration of Modes to Improve Coverage, Connectivity, and Convenience	-Establish a National Campaign to prepare/ update comprehensive urban strategic Plans for all cities, regions, and villages. -Create comprehensive, integrated, and Multi-Model Urban Mobility Plans inside cities and introduce mass transit and freight.
Promoting Car Free Urban Areas and Low Emission Zones	-Create comprehensive, integrated, and Multi-Model Urban Mobility Plans inside cities and introduce mass transit and freight.
Nation Wide Land Use Scenarios	-Relocate/rehabilitate existing industrial zones located within urban areas. -Establish a National Campaign to prepare/ update comprehensive urban strategic Plans for all cities, regions, and villages. -Create comprehensive, integrated, and Multi-Model Urban Mobility Plans inside cities and introduce mass transit and freight.
Parking Management	-Establish a National Campaign to prepare/ update comprehensive urban strategic Plans for all cities, regions, and villages. -Create comprehensive, integrated, and Multi-Model Urban Mobility Plans inside cities and introduce mass transit and freight
Invest in Technology	-Create comprehensive, integrated, and Multi-Model Urban Mobility Plans inside cities and introduce mass transit and freight.
Financing Options	-Create comprehensive, integrated, and Multi-Model Urban Mobility Plans inside cities and introduce mass transit and freight.

7 WHO BENEFITS FROM SUSTAINABLE TRANSPORT AND MOBILITY POLICIES?

7. WHO BENEFITS FROM SUSTAINABLE TRANSPORT AND MOBILITY POLICIES: TARGET POPULATION

The deterioration of the transport sector has had an adverse impact on the most vulnerable groups in the country, such as the poor, women, students, refugees, etc., specifically regarding the available mobility options and cost of transportation.

Within this context, mainstreaming transport and urban mobility into the JUNP, specifically the integration of sustainable transport modes into the JUNP, is expected to first and foremost support the most disadvantaged groups in the country, since the adoption and implementation of sustainable transport and mobility policies mainly focuses on providing alternative, affordable, and inclusive transport means for the public, while simultaneously reducing the need to travel by car, through the integration of transport and urban planning.

Accordingly, the below table shows examples of the expected positive impacts that transport and mobility policies can have on the most disadvantaged and at-risk groups.

Table 8: Transport and Mobility in the New Urban Agenda

Policy	Impact on the Most Disadvantaged and At-risk Groups
Land use Densification	Making public transport more feasible and viable, which would provide an available and affordable transport mode for the most at-risk groups such as the poor, women, university students, refugees, etc.
Mixed Land Use Planning	Bringing jobs and education closer to the place of residence for the most at-risk groups.
Transit-Oriented Developments (TODs)	Bringing jobs and education closer to the place of residence for the most at-risk groups. Making public transport available for the most at-risk groups.
Defining Urban Growth Boundaries:	Making public transport more feasible and viable, which would provide an available and affordable transport mode for the most at-risk groups.
Restrict the Number of License Plates for Cars	Making public transport more feasible and viable, which would provide an available and affordable transport mode for the most at-risk groups.
Giving Priority to Sustainable Transport Modes in Road Planning	Ensuring public transport and active transport modes (walking, cycling, etc.) are accounted for and are affordable and reliable transport modes for the most at-risk groups, such as the poor, women, university students, refugees, etc.
Integration of Modes to Improve Coverage, Connectivity, and Convenience	Ensuring public transport and active transport modes (walking, cycling, etc.) are integrated with other modes of transport, and are affordable, reliable, and flexible transport modes for the most at-risk groups, such as the poor, women, university students, refugees, etc. This policy also endeavors to improve the mobility of people from their place of residences to jobs, education, and other resources/activities in a more reliable manner

8 CONCLUSION

8. CONCLUSION

Transport is widely recognized as a prerequisite for sound economic development, as it drives competitiveness, growth, and job creation. It provides access and mobility to employment, education, and other resources, allows for the import and export of goods, as well as connects resource base with demand base. In Jordan, the transport sector, specifically the urban transport system (roads and public transport), has been worsening due to the increased demand for travel resulting from several factors including the significant increase in population, the massive and sudden influx of Syrian refugees, and the concentration of population in major urban areas. All of this is exacerbated by the dependency and dominance of cars in the country, which has led to an exhausted sector and, consequently, unsustainable mobility patterns in the country.

An assessment of the country's urban transport and mobility sector has revealed that the sector suffers from several gaps and challenges that have accumulated over the years. Those challenges include, but are not limited to:

- Weak financing and investment in the transport sector.
- Population and economic growth, which has increased the demand for transporting goods and passengers.
- Lack of a clear and efficient institutional setup, resulting in unclear responsibilities between authorities.
- Lack of comprehensive planning for the different sector elements.
- Car dominance.
- Lack of investment and supply of sustainable transport modes such as public transport.
- Clear deficiency in the planning and implementation of other sustainable modes of transport such as walking, cycling, and smart mobility.
- High rates of transport accidents, injuries, and fatalities.
- Air pollution and environmental impacts whereby, similar to most countries, air pollution resulting from the transport sector is considered one of the greatest sources of pollution.
- Lack of qualified technical and professional staff to lead comprehensive planning initiatives in the sector.

The UN-Habitat Regional Office for Arab States, in collaboration with the Regional and Metropolitan Planning Unit at the Urban Planning and Design Branch of UN-Habitat, aims to support the Government of Jordan to initiate the development of a sustainable, inclusive, and evidence-based National Urban Policy for the country. The main objective of the JNUP is to strengthen policy-making capacities in Jordan and promote a participatory and inclusive approach to urbanization with an evidence-base and accountability focus.

Recognizing the criticality of the sustainable transport and mobility sector and its interdependencies with urban planning and policies in Jordan, this thematic guide has been developed to mainstream urban mobility and transportation into the JNUP in order to derive recommendations on how urban mobility and transportation can be incorporated in urban policies to promote sustainable development.

Based on the outcomes of the feasibility and diagnostic activities (where stakeholders were identified, gaps and opportunities were defined, and best practices were reviewed), it was clear that Jordan is in crucial need for a comprehensive transportation planning framework integrated within the JNUP in order to drive more sustainable, resilient, and compact developments and settlements, where access and connectivity to jobs, education, and resources can be improved, adverse impacts of transport on environment and health can be mitigated, and institutional and legislative frameworks are better aligned and coordinated. In accordance with this analysis, this thematic guide proposed several transport and mobility policies to be mainstreamed into the JNUP with the purpose of promoting sustainable, affordable, and multimodal transport and mobility systems integrated with urban planning and policies.

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The recommended policies included policies to support land use integration (for better and more inclusive urban panning practices), such as land densification, mixed-use planning, and TODs, as well as policies to support sustainable transport, such as restricting the number of license plates, giving priority to sustainable transport modes in road planning, and the integration of transport modes to improve coverage and connectivity.

9 ANNEX A: NEW URBAN AGENDA AND GLOBAL AGENDA REFERENCES

9. ANNEX A: NEW URBAN AGENDA AND GLOBAL AGENDA REFERENCES

Table A1: Transport and Mobility in the New Urban Agenda

Paragraph 50	states a commitment 'to **encouraging urban-rural interactions and connectivity by strengthening sustainable transport and mobility** as well as technology and communications networks and infrastructure, underpinned by planning instruments based on an **integrated urban and territorial approach**, to maximize the potential of these sectors for enhanced productivity, social, economic, and territorial cohesion, as well as safety and environmental sustainability. This should include **connectivity between cities and their surroundings**, peri-urban and rural areas, as well as greater land-sea connections, where appropriate'.
Paragraph 114	promotes '**access for all to safe**, age and gender-responsive, affordable, accessible and sustainable **urban mobility and land and sea transport systems**, enabling meaningful participation in social and economic activities in cities and human settlements, by **integrating transport and mobility plans** into overall urban and territorial plans and promoting a wide range of transport and mobility options by supporting: (a) A significant increase in **accessible, safe, efficient, affordable, and sustainable infrastructure for public transport**, as well as **non-motorized** options such as walking and cycling, and prioritizing them over private motorized transportation. (b) Equitable **"transit-oriented development"** that minimizes the displacement of the poor, and features affordable, mixed-income housing and a mix of jobs and services. (c) Better and **coordinated transport and land-use planning**, which would lead to a reduction of travel and transport needs, enhancing connectivity between urban, peri-urban, and rural areas, including waterways, as well as transport and mobility planning, particularly for small island developing States and coastal cities. (d) Urban **freight planning and logistics** concepts that **enable efficient access to products and services**, minimizing their impact on the environment and on the livability of the city and maximizing their contribution to sustained, inclusive, and sustainable economic growth.
Paragraph 116	is a commitment to support the development of **'mechanisms and frameworks'**, based on sustainable **national urban transport and mobility policies**, for sustainable, open, and transparent procurement and regulation of transport and mobility services in urban and metropolitan areas, including new technology that enables shared mobility services. It also seeks to 'support the development of clear, transparent and accountable contractual relationships between **local governments and transport and mobility service providers**, including on data management, which further protect the public interest and individual privacy and define mutual obligations.'
Paragraph 96	calls for ' between transport and urban and territorial planning departments, in mutual understanding of **planning and policy frameworks**, at the national, subnational and local levels, including through sustainable urban and metropolitan transport and mobility plans…'
Paragraph 118	calls on 'national, subnational and local governments to **develop and expand financing instruments**, enabling them to improve their **transport and mobility infrastructure and systems**, such as mass rapid-transit systems, integrated transport systems, air, and rail systems, and safe, sufficient, and adequate pedestrian and cycling infrastructure and technology-based innovations in transport and transit systems.'

Provisions in major new global frameworks that were established in 2015 that are relevant to or supportive of national urban policy include the following:

Table A2: Global Agenda Frameworks on Transport and Mobility

The Addis Ababa Action Agenda of the Third International Conference on Financing for Development (Addis Ababa Action Agenda (2015)	This framework sought to find ways of financing the post-2015 development Agenda. Article 14 calls for the establishment of a new forum to bridge the infrastructure gap by investing in sustainable and resilient infrastructure, including transport. Article 34 acknowledged financing difficulties in devolved government, and thus called for international support to support municipalities and local authorities in least developed countries and small island states implement resilient environmentally sound infrastructure such as transport. Article 88 recognizes the potential for regional economic integration and interconnectivity and thus called for funding of regional transport corridors and missing links to promote trade and regional integration and cooperation. This is linked to article 90, which seeks to improve regional trade, where transport links are important and thus need to be developed.
The Sendai Framework for Disaster Risk Reduction - 2015-2030 (2015)	Priority 4 seeks to 'enhance disaster preparedness for effective response and to build back better in recovery, rehabilitation and construction.' To achieve this, Article 33(c) suggests the promotion of resilience of the new and existing critical infrastructure including water, transportation, and telecommunications infrastructure, educational facilities, hospitals, and other health facilities, to ensure that they remain safe, effective, and operational during and after disasters to provide live-saving and essential services.
UN 2030 Agenda (2015)	Target 11.2 aims by 2030 at providing access to safe, affordable, accessible, and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention paid to the needs of those in vulnerable situations, women, children, persons with disabilities, and older persons. Target 3.6, on the other hand, aims, by 2020, to halve the number of global deaths and injuries from road traffic accidents.
The High-level Advisory Group on Sustainable Transport (2014)	Established by the UN Secretary General, the group has been responsible for formulating recommendations on sustainable transport development, actionable at global, national, local, and sectoral levels. Its core tasks have been identified in the integration of sustainable transport in relevant intergovernmental processes, mobilization of actions and initiatives to support sustainable transport with key stakeholders, the launch of a "Global Transport Outlook Report", and the formulation of recommendations on sustainable transport.
Rio +20: The Future We Want (2012), Paragraphs 123-133	Member States highlighted the central role that transportation and mobility have in ensuring sustainable development. Paragraph 132 reads, "Sustainable transportation can enhance economic growth and improve accessibility. Sustainable transport achieves better integration of the economy while respecting the environment", while in paragraph 133, Member States express their support of "the development of sustainable transport systems, including energy efficient multi-modal transport systems, notably public mass transportation systems, clean fuels and vehicles, as well as improved transportation systems in rural areas". Member states committed to "take into account road safety as part of our efforts to achieve sustainable development".

Kyoto Protocol (2005)	Recalled the need to measure the limit and/or reduction of emissions of greenhouse gases not controlled by the Montreal Protocol in the transport sector and urged to limit and/or reduce methane emissions through recovery and use in waste management, as well as in the production, transport, and distribution of energy.
Johannesburg plan of Implementation – JPOI (2002)	Decided at the World Summit on Sustainable Development (WSSD), the Johannesburg Summit sought to "Promote an integrated approach to policy -making at the national, regional and local levels for transport services and systems to promote sustainable development, including policies and planning for land use, infrastructure, public transport systems and goods delivery networks, with a view to providing safe, affordable and efficient transportation, increasing energy efficiency, reducing pollution, congestion and adverse health effects and limiting urban sprawl, taking into account national priorities and circumstances."
9th Session of the Commission for Sustainable Development (CSD) – (2001)	In Chapter 1B, Decision 9.3, energy, transport, atmosphere, and information for decision making, participation, and international co-operation were identified as pertinent development issues forwarded to the United Nations General Assembly Special Session for discussion.
General Assembly 19th Special Session - Implementation Agenda 21 (1997)	In this session during a five-year review of Agenda 21, the UN General Assembly flagged out that in the following 20 years, global energy demand was going to be driven by transportation as transport was the largest end-user of energy in developed countries and the fastest growing in developing countries.
Agenda 21 (1992)	The role of transport in sustainable development was recognized in the 1992 UN Earth Summit and amplified in the Agenda 21 outcome document where transport was identified as a key development issue. Chapter 7: Human Settlements and Chapter 9: Atmosphere made references to attending to transport to gain sustainability goals.

10 ANNEX B: CHECKLISTS

10. ANNEX B: CHECKLISTS

Appendix 1: Checklist for Mainstreaming Transport and Mobility into NUP process

Phases of NUP	Overall Checklist for NUP Process	Score
Feasibility phase	A. Have key transport and mobility challenges and opportunities been defined for the region/country? 1. ☐No 2. ☐Partly 3. ☐ Averagely 4. ☐ To a large extent 5. ☐ Yes	
	B. Have key transport and mobility opportunities been defined for the region/country? 1.☐No 2. ☐Partly 3. ☐ Yes	
	C. Have all the relevant stakeholders for the defined transport and mobility NUP priority components been mapped 1. ☐ No 2. ☐Partly 3. ☐ Averagely 4. ☐ To a large extent 5. ☐ Yes	
	D. Have the roles of the stakeholders been defined? 1. ☐No 2. ☐Partly 3. ☐ Yes	
	E. Have the existing urban related policies/strategies/frameworks been analysed in the context of transport and mobility challenges? 1. ☐No 2. ☐Partly 3. ☐ Yes	
	F. Have policy gaps on transport and mobility been identified? 1. ☐No 2. ☐Partly 3. ☐ Yes	
	Total Score	**/25**

Diagnostic phase	A. Have preliminary research about the nature and extent (including causes and impacts) of the transport and mobility challenges and opportunities been conducted? Transport and mobility challenges: 1.☐No 2. ☐Partly 3. ☐ Yes Transport and mobility opportunities: 1.☐No 2. ☐Partly 3. ☐ Yes	
	B. Have data gaps if they exist been documented from the preliminary research? Transport and mobility challenges: 1.☐No 2. ☐Partly 3. ☐ Yes Transport and mobility opportunities: 1.☐No 2. ☐Partly 3. ☐ Yes	

	C. Has an analysis of the capacities of the decision makers (government officials) in transport and mobility been defined? I. Human -1.☐No 2. ☐Partly 3. ☐ Yes II. Financial -1.☐No 2. ☐Partly 3. ☐ Yes III. Technical -1.☐No 2. ☐Partly 3. ☐ Yes IV. Institution -1.☐No 2. ☐Partly 3. ☐ Yes	
	D. Have capacity gaps on transport and mobility been identified? I. Human -1.☐No 2. ☐Partly 3. ☐ Yes II. Financial -1.☐No 2. ☐Partly 3. ☐ Yes III. Technical -1.☐No 2. ☐Partly 3. ☐ Yes IV. Institution -1.☐No 2. ☐Partly 3. ☐ Yes	
	E. If data gaps on transport and mobility exist; have field survey been planned for and conducted? I. Planned: 1.☐No 2. ☐Partly 3. ☐ Yes II. Conducted: 1.☐No 2. ☐Partly 3. ☐ Yes	
	F. Has an analysis report on the transport and mobility challenges and opportunities been prepared? Transport and mobility challenges: 1.☐No 2. ☐Partly 3. ☐ Yes Transport and mobility opportunities: 1.☐No 2. ☐Partly 3. ☐ Yes	
	G. Has a Capacity development strategy (of the gaps identified above) been defined? I. Human -1.☐No 2. ☐Partly 3. ☐ Yes II. Financial -1.☐No 2. ☐Partly 3. ☐ Yes III. Technical -1.☐No 2. ☐Partly 3. ☐ Yes IV. Institution -1.☐No 2. ☐Partly 3. ☐ Yes	
	H. Have alternative strategies/approaches on curbing these challenges and enhancing the opportunities through policy been outlined (referring to recommendations in this guide)? 1.☐No 2. ☐Partly 3. ☐ Yes	
	I. Have the cost-benefit analysis of these strategies/approaches been conducted? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total Score		

Formulation phase	A. Has a SWOT analysis of the alternative strategies/approaches been conducted? 1.☐No 2. ☐Partly 3. ☐ Yes	
	B. Have the best approaches/strategies been identified? 1.☐No 2. ☐Partly 3. ☐ Yes	
	C. Have the capacity needs for the best transport and mobility approaches been determined? I. Human: 1.☐No 2. ☐Partly 3. ☐ Yes II. Financial: 1.☐No 2. ☐Partly 3. ☐ Yes III. Technical: 1.☐No 2. ☐Partly 3. ☐ Yes	
	D. Has a detailed policy action plan (including the financial and capacity needs strategy and monitoring and evaluation framework) for the strategies been prepared (refer to the guide)? 1.☐No 2. ☐Partly 3. ☐ Yes	
	E. Are the completed transport and mobility policy proposal and action plan available? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total Score		/
Implementation phase	A. Has the action/implementation plan for the policy proposal been completed? 1.☐No 2. ☐Partly 3. ☐ Yes	
	B. Has the implementation plan been approved by relevant stakeholders? 1.☐No 2. ☐Partly 3. ☐ Yes	
	C. Has the transport and mobility priority interventions/acupuncture projects been identified? 1.☐No 2. ☐Partly 3. ☐ Yes	
	D. Has the financial strategy for transport and mobility been taken up by the responsible persons/institutions? 1.☐No 2. ☐Partly 3. ☐ Yes	

	A. Has the legal strategy been approved for transport and mobility policy proposal implementation? 1.☐No 2. ☐Partly 3. ☐ Yes	
	B. Have the relevant stakeholder's capacities been improved for transport and mobility policy proposal execution? 1.☐No 2. ☐Partly 3. ☐ Yes	
	C. Have the relevant stakeholders taken up their roles and responsibilities? 1.☐No 2. ☐Partly 3. ☐ Yes	
	D. Have feedback mechanisms for the transport and mobility proposal been developed to monitor the challenges and improvements? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total Score		**/40**
Monitoring and Evaluation phase of NUP process	A. Have all policy options been taken up by the relevant stakeholders? 1.☐No 2. ☐Partly 3. ☐ Yes	
	B. Are the relevant stakeholder's able to execute the transport and mobility policy proposal from the improved capacities? 1.☐No 2. ☐Partly 3. ☐ Yes	
	C. Is the financial strategy effective for the implementation? 1.☐No 2. ☐Partly 3. ☐ Yes	
	D. Is the legal strategy effective for transport and mobility policy proposal? 1.☐No 2. ☐Partly 3. ☐ Yes	
	E. Have the timelines for the transport and mobility policy proposal been followed? If not, what are the challenges? 1.☐No 2. ☐Partly 3. ☐ Yes	
	F. How can the challenges for following the timelines be resolved? 1.☐No 2. ☐Partly 3. ☐ Yes	
	G. Has the mainstreamed policy enabled the implementation of the transport and mobility policy proposal? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total Score		**/30**

Appendix 2: Checklist for Integrating Transport and Mobility into the NUP pillars

I. Participation

Stakeholders	**Been included in decision making process on transport and mobility?**	**Included the Rural constituent**	**How many? (where applicable)**	**Been included in the transport and mobility component implementation?**	**Is yes indicate how?** 1. **Beneficiary** 2. **Financier** 3. **Implementer** 4. **Partner** 5. **Others specify**
National government	☐Yes ☐No			☐Yes ☐No	
Sub-national governments	☐Yes ☐No			☐Yes ☐No	
Local governments	☐Yes ☐No			☐Yes ☐No	
Women	☐Yes ☐No			☐Yes ☐No	
Youth	☐Yes ☐No			☐Yes ☐No	
Civil society organizations	☐Yes ☐No			☐Yes ☐No	
Private sector	☐Yes ☐No			☐Yes ☐No	
Vulnerable populations	☐Yes ☐No			☐Yes ☐No	
Community groups	☐Yes ☐No			☐Yes ☐No	
Others specify...					

II. Capacity Development

	Components to check	Score
A.	Have the human capacity needs on transport and mobility and implementation of the transport and mobility policy proposals of the relevant stakeholders been identified 1.☐No 2. ☐Partly 3. ☐ Yes	
B.	Has a human capacity development strategy been developed for the transport and mobility components of the NUP? 1.☐No 2. ☐Partly 3. ☐ Yes	
C.	Has a human capacity development strategy been implemented for the transport and mobility components of the NUP? 1.☐No 2. ☐Partly 3. ☐ Yes	
D.	If not implemented what are the issues/challenges?	
E.	What adjustments could be made?	
F.	Have the financial capacity needs for transport and mobility and the implementation of the transport and mobility components of the NUP proposals been identified? 1.☐No 2. ☐Partly 3. ☐ Yes	
G.	Has a finance strategy been developed for the transport and mobility components of the NUP? 1.☐No 2. ☐Partly 3. ☐ Yes	
H.	Has a finance strategy been implemented for transport and mobility components of the NUP? 1. 1.☐No 2. ☐Partly 3. ☐ Yes	
I.	If not implemented what are the issues/challenges?	
J.	What adjustments could be made?	
K.	Have the institutional capacity needs for the implementation of the transport and mobility components of the NUP for the relevant stakeholders been identified? 1. 1.☐No 2. ☐Partly 3. ☐ Yes	
L.	Has transport and mobility institution capacity enhancement strategy been developed for the transport and mobility components of the NUP? 1.☐No 2. ☐Partly 3. ☐ Yes	
M.	If not implemented have the issues/challenges been recognized? 1.☐No 2. ☐Partly 3. ☐ Yes	
N.	Have the necessary adjustments due to the challenges been made? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score		**/40**

III. Acupuncture projects

	Score
A. Have transport and mobility quick win projects/programs been identified? 1. 1.☐No 2. ☐Partly 3. ☐ Yes	
B. Have the required financial resources been allocated? 1. 1.☐No 2. ☐Partly 3. ☐ Yes	
C. Have the required human resources been allocated? 1. 1.☐No 2. ☐Partly 3. ☐ Yes	
D. Have the required technical resources been allocated? 1. 1.☐No 2. ☐Partly 3. ☐ Yes	
E. Is there a timeline of the implementation? 1. 1.☐No 2. ☐Partly 3. ☐ Yes	
F. Have the set timelines been implemented? 1.☐No 2. ☐Partly 3. ☐ Yes	
G. If no, have the challenges been identified? 1.☐No 2. ☐Partly 3. ☐ Yes	
H. Have the identified challenges been addressed? 1.☐No 2. ☐Partly 3. ☐ Yes	
I. If the projects have been implemented have the lessons learnt been documented? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total Score	**/30**

Appendix 3: Checklist for Mainstreaming Transport and Mobility into the NUP document

Recommendation 1: Prioritise planning for, development and maintenance of sustainable transport and mobility infrastructure; as a driver of economic growth in urban and rural areas.	***Scores***
1) Has policy given directions on planning for sustainable transport and mobility in urban and territorial planning? 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Has policy given directions on the development of transport and mobility infrastructure in urban and territorial planning? 1.☐No 2. ☐Partly 3. ☐ Yes	
3) Has policy given directions on implementing transport and mobility infrastructure and relevant implementation mechanisms for transport and mobility measures in urban and territorial plans? 1.☐No 2. ☐Partly 3. ☐ Yes	
4) Has transport and mobility been identified as a key driver for economic growth in urban and rural areas? 1.☐No 2. ☐Partly 3. ☐ Yes	
5) Has policy promoted strategies for more compact urban development built around main transport corridors? 1.☐No 2. ☐Partly 3. ☐ Yes	
6) Does policy create healthy and livable cities with low transport energy requirements? 1.☐No 2. ☐Partly 3. ☐ Yes	
7) Does policy create healthy and livable cities with lower congestion? 1.☐No 2. ☐Partly 3. ☐ Yes	
8) Has policy instituted the need for awareness raising and the capacity of the local planning levels on transport and mobility? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/24**
Recommendation 2: Integrate territories, societies and across sectors through transport and mobility; to enhance urban-rural connectivity and trans-national connectivity, essentially promoting liveability and wellbeing of urban and rural areas.	***Scores***
1) Has policy advocated for an integration of transport and mobility into national urban planning approaches including urban, peri-urban, and rural areas? 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Has policy integrated land uses in urban areas to decrease the transport footprint of urban areas, without hampering access to places 1.☐No 2. ☐Partly 3. ☐ Yes	

3) Has policy advocated for an integration of transport and mobility into regional urban planning approaches including urban, peri-urban, and rural areas? 1.☐No 2. ☐Partly 3. ☐ Yes	
4) Has policy advocated for an integration of transport and mobility into local urban planning approaches including urban, peri-urban, and rural areas? 1.☐No 2. ☐Partly 3. ☐ Yes	
5) Has policy advocated for an integration of transport and mobility into sectoral planning? 1.☐No 2. ☐Partly 3. ☐ Yes	
6) Does policy advocate for integration of different human settlements/societies using transportation links? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/18**
Recommendation 3: Make transport planning, policy and investment decisions based on the three sustainable development dimensions—social development impacts, environmental impacts (including climate) and economic growth impacts —and a full life cycle analysis.	***Scores***
1) Has policy developed a transport development and management plan for a country/ region to guide informed investment in the transport sector? 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Has policy advanced equitable access (to jobs, markets, services) as a key guiding principle for transport planning and policy and for investments in infrastructure (maintenance, renewal, or building)? 1.☐No 2. ☐Partly 3. ☐ Yes	
3) Has policy ensured that resilience to climate impacts and other natural and economic shocks and chronic stresses is central to planning transport infrastructure and developing transport networks and that opportunities to "leapfrog" to more sustainable infrastructure and transport systems are maximized? 1.☐No 2. ☐Partly 3. ☐ Yes	
4) Does policy make the maintenance of existing infrastructure and the improvement of its efficiency an integral part of transport policy and investment decision making? 1.☐No 2. ☐Partly 3. ☐ Yes	
5) Does policy compute external costs and benefits of transport and mobility as a tool for informed investment decisions and aim at achieving sustainable and low-carbon transport whilst maintaining equitable access for all? 1.☐No 2. ☐Partly 3. ☐ Yes	
6) Does policy ensure that resilience to climate impacts and other natural and economic shocks and chronic stresses is central to planning transport infrastructure and developing transport networks and that opportunities to realise more sustainable infrastructure and transport systems? 1.☐No 2. ☐Partly 3. ☐ Yes	

7) Does policy prioritize the use of full value chain analysis in transport policy making, with the aim of enhancing the cost efficiency of trade? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/21**
Recommendation 4: Integrate all sustainable transport planning efforts with an appropriately balanced development of transport modes: integration vertically among levels of government and horizontally across modes, territories, and sectors.	***Scores***
1) Does policy recognise that integrated planning for transport systems and land use should advance sustainable transport? 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Does policy prioritise development, adoption and implementation of integrated national sustainable transport frameworks and strategies for the movement of people and goods? 1.☐No 2. ☐Partly 3. ☐ Yes	
3) Does policy foster regional integration and institutional cooperation among national governments to enable the safe, secure, and efficient movement of people and goods across borders and along major transport corridors, while reducing economic, social, and environmental costs across the total value chain? 1.☐No 2. ☐Partly 3. ☐ Yes	
4) Does policy develop sustainable urban mobility plans that support intermodal and interconnected transport networks for seamless and “door-to-door” mobility and connectivity of people and goods, aligned with national policies and supported by national governments through guidance, financial support, and technical capacity building? 1.☐No 2. ☐Partly 3. ☐ Yes	
5) Does policy align, within the national and local government levels, tasks and responsibilities of transport and land use authorities with an eye toward a single joint authority at each level with oversight of all policy and planning aspects? 1.☐No 2. ☐Partly 3. ☐ Yes	
6) Does policy promote international and regional dialogue on sustainable development and the logistics underpinning the movement of people and goods, recognizing that efficient logistics drives economic growth and social development? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/18**

Recommendation 5: Establish and/or realign national and local transport governance frameworks to realise institutional, legal, and regulatory frameworks that promote sustainable transport at national and local governance scales.	***Scores***
1) Has policy devolved/decentralised authority to the appropriate levels of government, ensuring that national, subnational, and local authorities have adequate funding, resources, and capacity to carry out their responsibilities on transport and mobility? 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Has policy set out measures to realise transparency and accountability of all relevant national and local ministries and authorities with relevant mandates on transport and mobility? 1.☐No 2. ☐Partly 3. ☐ Yes	
3) Does policy set clear parameters, in a process led by governments and public authorities, for the involvement of the private sector in transport service provision? 1.☐No 2. ☐Partly 3. ☐ Yes	
4) Does policy set out the legal and regulatory measures seeking to align transport and mobility into urban and territorial development? 1.☐No 2. ☐Partly 3. ☐ Yes	
5) Have there been developed means of ensuring good governance in transport and mobility at the national, regional, and local scales? 1.☐No 2. ☐Partly 3. ☐ Yes	
6) Are there measures to foster regional co-operation among stakeholders to realise safe, secure, and efficient movement of people, goods, and services along transport lines? 1.☐No 2. ☐Partly 3. ☐ Yes	
7) Are there measures to foster institutional co-operation among stakeholders to realise safe, secure, and efficient movement of people, goods, and services along transport lines? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/21**
Recommendation 6: Devise measures to realise transport health, security, and safety by preventing transport related incidents, deaths, and injuries.	***Scores***
1) Has policy prioritized the prevention of deaths and injuries of transport users, using the Sustainable Development Goal target of '*reducing global road traffic deaths and injuries by 50% by 2020*' as a guide? 1. 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Has policy followed a systemic approach to improving road safety? 1.☐No 2. ☐Partly 3. ☐ Yes	

3) Has policy promoted safety in the transport system design; that gives priority and emphasis to protecting people from death and injury, considering human fallibility and vulnerability? 1.☐No 2. ☐Partly 3. ☐ Yes	
4) Have there been set aside strategies disseminate to local stakeholders' best practices on road safety legislation through urban policy? 1.☐No 2. ☐Partly 3. ☐ Yes	
5) Is policy particular on establishing/maintaining minimum safety standards for vehicles and vessels are set and enforced, with particular attention to the secondary market in developing countries? 1.☐No 2. ☐Partly 3. ☐ Yes	
6) Are there in the policy measures to reduce behavioural risk factors that lead to road traffic deaths and injuries through legislation, awareness raising, signage and rules and regulations? 1.☐No 2. ☐Partly 3. ☐ Yes	
7) Does policy mention that transport operators implementing mechanisms to curb the spread of health hazards such as communicable diseases by observing high levels of hygiene and disease control measures set by international and local disease control agencies "system of cities"* approach)? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/21**
Recommendation 7: Develop an efficient and affordable Mass Public Transport System in all urban areas of a country/region	***Scores***
1) Has policy adopted a transit-oriented development model in the planning, design, and development of urban public transport to ease access to urban opportunities and places? 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Has policy integrated transport modes in urban areas through design and development; to increase modal choice and seamless transfers? 1.☐No 2. ☐Partly 3. ☐ Yes	
3) Has policy prioritised public transportation in urban areas when planning for urban travel, to aim at a modal split of 50:50 between public transport and other modes of transport; with priority being given to public transport and NMTs? 1.☐No 2. ☐Partly 3. ☐ Yes	
4) Has policy defined measures to undertake research on optimising modal split categories in urban areas of a country/region? 1.☐No 2. ☐Partly 3. ☐ Yes	

* *System of cities is basically the interconnectedness of cities*

5) Has policy prioritised the development of integrated mass rapid transit systems for urban travel (such BRT and commuter rail) for higher category urban areas to improve flows of people? 1.☐No 2. ☐Partly 3. ☐ Yes	
6) Has policy adopted efficient bus management systems that promote flows and attract users such as dedicated bus lanes, locally adapted bus designs? 1.☐No 2. ☐Partly 3. ☐ Yes	
7) Has policy promoted establishment of informed bus routing and scheduling, cashless fare systems, dedicated bus stops and priority measures for public transport? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/21**
Recommendation 8: Plan, develop and maintain NMT transport systems in all urban areas and rural areas of a country/region	***Scores***
1) Has policy provided for planning of NMT transport corridors connecting urban and rural areas? 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Has policy provided for development of NMT transport corridors connecting urban and rural areas? 1.☐No 2. ☐Partly 3. ☐ Yes	
3) Has policy provided for maintenance of NMT transport corridors connecting urban and rural areas? 1.☐No 2. ☐Partly 3. ☐ Yes	
4) Has policy integrated NMT transport corridors to other transport modes to promote intermodal transfers? 1.☐No 2. ☐Partly 3. ☐ Yes	
5) Has policy Integrate NMT transport users into the use of other transport channels, such as providing for bike parking bays in buses and trains? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/15**

Recommendation 9: Prioritise sustainable transport technologies through outcome-oriented government investments and policies that encourage private sector investment and action that are environmentally friendly, through various incentive structures.	***Scores***
1) Policies provide for the enactment and enforcement of performance standards that drive the transport industry players toward developing clean and more efficient systems and technologies and have them commit to international environmental and transport legislation (*Agenda, Treaties, Protocols and Agreements*); such as Clean Air Initiative resolutions that commit countries to adopt fewer polluting fuels. 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Policy maintains neutrality to allow consumers and market forces to drive development toward the most effective sustainable technology? 1.☐No 2. ☐Partly 3. ☐ Yes	
3) Governments (at all scales) lead by example through government procurement of sustainable technologies and products, and policies encouraging employees to travel and act sustainably. 1.☐No 2. ☐Partly 3. ☐ Yes	
4) Policy advances knowledge sharing, open data sources and technical assistance to developing countries, including through capacity building and knowledge, test and demonstration platforms by national governments, international organizations, and the business sector. 1.☐No 2. ☐Partly 3. ☐ Yes	
5) Policy promotes use of green energy in all transportation systems. 1.☐No 2. ☐Partly 3. ☐ Yes	
6) Policy champions for implementation and enforcement of emission testing in all transportation modes and sets appropriate standards. 1.☐No 2. ☐Partly 3. ☐ Yes	
7) Policy sets guidelines for licensing and decommissioning vehicles to avoid excessive emissions and pollution. 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/21**
Recommendation 10: Institute the use of various modes of traffic management to mitigate congestion in urban areas and improve traffic flows in cities.	***Scores***
1) Has policy provided for the establishment of traffic management systems in urban areas? 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Has policy prioritised the development and maintenance of dedicated bus lanes, taxi lanes, walking and cycling lanes in main urban areas, and between cities? 1.☐No 2. ☐Partly 3. ☐ Yes	

3) Has policy introduced priority access for high-capacity passenger vehicles at intersection points in cities? 1.☐No 2. ☐Partly 3. ☐ Yes	
4) Has policy adopted the use of Intelligent Transport Systems (ITS) to monitor and control traffic flows: including CCTV cameras, intelligent traffic lights, signalised pedestrian crossings, smart roads, etc.? 1.☐No 2. ☐Partly 3. ☐ Yes	
5) Do policies include measures to reduce dependence on private car transport such as use of MRT and NMT as the main modes of travel in urban areas? 1.☐No 2. ☐Partly 3. ☐ Yes	
6) Does policy promote enforcement of existing and establishment of new traffic laws aimed at reducing congestion on roads 1.☐No 2. ☐Partly 3. ☐ Yes	
7) Do policies/strategies introduce road pricing measures to reduce traffic volumes, such as workplace parking, higher parking in the city center or on congestion zones, car free/ free emission zones? 1.☐No 2. ☐Partly 3. ☐ Yes	
8) Do policies introduce regulation of road-use hours to specific times of the day for various modes of transport such as car drivers and cargo delivery vans/trucks? 1.☐No 2. ☐Partly 3. ☐ Yes	
9) Does policy promote development and deployment of park and ride systems in urban areas? 1.☐No 2. ☐Partly 3. ☐ Yes	
10) Does policy mention the introduction of car park information systems in urban areas? 1.☐No 2. ☐Partly 3. ☐ Yes	
11) Does policy adopt the use of Vehicle Management Systems and bus information systems in urban public transport services? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/33**
Recommendation 11: Set strategies for sustainable urban freight and logistics practices that will reduce emissions related to cargo transport activities.	***Scores***
1) Does policy provide for development of urban freight stations and distribution centres to ease local goods delivery in urban areas? 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Does policy prioritise the use of adapted low energy or emission free vehicles for urban cargo delivery? 1.☐No 2. ☐Partly 3. ☐ Yes	

3) Does policy prioritise development and maintenance of cargo infrastructure in urban areas, between cities and between countries, including the requisite terminal facilities? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/09**
Recommendation 12: Diversify funding sources for transport investment and create coherent fiscal frameworks in urban areas to realise investment and upgrading of sustainable transport infrastructure.	***Scores***
1) Have means to diversify sources of funding towards sustainable transport and mobility been incorporated in policy? 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Have beneficiary and polluter pays measures including carbon pricing, congestion pricing, and other charges been captured in policy? 1.☐No 2. ☐Partly 3. ☐ Yes	
3) Are fairness and equity in road user charging captured in policy? 1.☐No 2. ☐Partly 3. ☐ Yes	
4) Does policy mention innovative approaches to finance transport projects, such as land value capture programs, green bond investments, and transit-oriented development grants? 1.☐No 2. ☐Partly 3. ☐ Yes	
5) Does policy recognise measures to scale down and eliminate inefficient fossil fuel subsidies by national and sub-national governments. 1.☐No 2. ☐Partly 3. ☐ Yes	
6) Does policy ensure that the principles of sustainability are respected when national and local governments and private sector organizations are planning for the participation of private capital through public-private partnerships and other approaches. 1.☐No 2. ☐Partly 3. ☐ Yes	
7) Has policy established a clear criterion, including equitable access, for international development funding of sustainable transport? 1.☐No 2. ☐Partly 3. ☐ Yes	
8) Policies ensure that climate funding mechanisms finance sustainable transport initiatives, acknowledging their inherent complexity, great mitigation potential and multiple co-benefits. 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/24**

Recommendation 13: Build the technical capacity of transport planners and relevant stakeholders, especially in developing countries, through partnerships with international organizations, multilateral development banks, and governments at all levels, to ensure equitable access to knowledge products, markets, jobs, education and other resources on sustainable transport practices.	***Scores***
1) Have means for conducting capacity building as a core requirement for bankable sustainable transport projects been incorporated in policy? 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Have means to Collect, analyse, and share relevant data especially in developing countries for well-informed transport policy and investment decision making, for the development of pre-informed indicators on transport safety, equity, and resilience been captured in policy? 1.☐No 2. ☐Partly 3. ☐ Yes	
3) Does policy mention means to prioritise low emission, efficient and equitable transport solutions, shifting to the modes that are most appropriate to local and national circumstances and that best advance sustainable development? 1.☐No 2. ☐Partly 3. ☐ Yes	
4) Are there strategies to conduct skills assessment to identify the prevailing level of knowledge in transport and mobility for all stakeholders in transport and mobility in policy? 1.☐No 2. ☐Partly 3. ☐ Yes	
5) Are there ways to conduct a capacity needs assessment to identify gaps in knowledge on transport and mobility among stakeholders that might need to be upscaled and approximate resource investment that would be required to plug the capacity gap in urban policy? 1.☐No 2. ☐Partly 3. ☐ Yes	
6) Have measures to scope for capacity development strategy in the local authority or country on transport and mobility, and if missing, develop one mentioned in policy? 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/18**
Recommendation 14: NUP to Foster an informed, engaged public as a crucial partner in advancing sustainable transport solutions.	***Scores***
1) Have means to develop and promote public awareness campaigns and education programs to inform and engage people of all ages about the imperative of providing equitable access to social and economic opportunities as well as about the importance and benefits of sustainable mobility been incorporated in policy? * 1.☐No 2. ☐Partly 3. ☐ Yes	

* *Themes to be addressed by governments and international and civil society organizations include road safety; the benefits of public transport, walking and cycling; and opportunities for reducing carbon emissions*

2) Does policy pursue effective ways to seek inputs, buy-in and, when possible, co-creation, from a wide range of stakeholder groups when making transport planning, policy, infrastructure and system decisions? 1.☐No 2. ☐Partly 3. ☐ Yes	
3) Does policy address ways of conducting a scope of stakeholders to profile the scale and extent of participation; and quality of information expected from across the various stakeholders? 1.☐No 2. ☐Partly 3. ☐ Yes	
4) Policy mentions means of ensuring the process for all stakeholders is participatory and equitable 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/12**
Recommendation 15: NUP to have quick win programs/projects on sustainable transport and mobility	***Scores***
1) Have means to identify and list down feasible actionable quick win projects on transport and mobility that are implementable, as proposed in policy proposals or stakeholder meetings been incorporated in policy? 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Policy mentions measures to examine the capacity available to implement the policy proposals on transport and mobility (human, financial, institutional, legal and regulatory) and identify opportunities and challenges presented. 1.☐No 2. ☐Partly 3. ☐ Yes	
3) Policy allocates timelines and financial appropriations, with a clear identification of possible funding sources and stakeholders to be engaged in implementation 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/09**
Recommendation 16: Monitor and evaluate frameworks for sustainable transport and mobility and build capacity for gathering and analysing sound and reliable data and statistics.	***Scores***
1) Policy mentions ways to develop a set of baseline targets and indicators to use as performance indicators in assessing the mainstreaming of transport and mobility 1.☐No 2. ☐Partly 3. ☐ Yes	
2) Policy has established a comprehensive monitoring and evaluation methodology for sustainable transport by national and local governments, linking tracking frameworks, targets and indicators, where appropriate, to the Sustainable Development Goals? 1.☐No 2. ☐Partly 3. ☐ Yes	

3) Policy mentions of ways to take regular (in some cases annual) stock of progress toward transport goals within national and local governments and adjust policies and practices in response to the lessons learned with the objective to drive continuous improvement, focused on society's needs? 1.☐No 2. ☐Partly 3. ☐ Yes	
4) Policy mentions of ways to build a monitoring and evaluation capacity for transport and mobility in governments at all levels, including through sharing of lessons learned, best practices, training and guidance of international and civil society organizations and business 1.☐No 2. ☐Partly 3. ☐ Yes	
5) Are there measures to institutionalise and continuously monitor the mainstreaming of transport and mobility in urban policy and monitor outcomes of project implementation, through the assessment of indicators, analysis of project reports, surveys, regular meetings with core team members and key stakeholders? 1.☐No 2. ☐Partly 3. ☐ Yes	
6) Are there measures to create a feedback mechanism to inform future policy cycles regarding transport and mobility? 1.☐No 2. ☐Partly 3. ☐ Yes	
7) Measures to allocate resources for data collection, analysis and reporting on transport and mobility mentioned in NUP, using mixed monitoring methods (qualitative and quantitative); to enhance procurement of comparable data on transport and mobility projects, impacts, infrastructure use and concerns 1.☐No 2. ☐Partly 3. ☐ Yes	
Total score	**/21**
GRAND TOTAL SCORE	**XX/306**

Score Guide		
Below a third of the total score	Between a third up to two thirds of the total score	Above two thirds of the total score
Little/No *mainstreaming done on transport and mobility*	***Average*** *mainstreaming of Transport and mobility into NUP*	***High*** *mainstreaming of Transport and Mobility done*

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11. REFERENCES

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For more information:
United Nations Human Settlements Programme (UN-Habitat)
Tayseer Nana'ah Street
South Abdoun
831201 Amman-Jordan

E: unhabitat-jordan@un.org
W: www.unhabitat.org