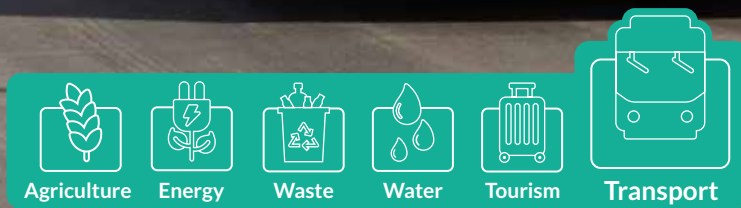




TRANSPORT SECTOR



Green Growth National Action Plan 2021-2025



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His Majesty King Abdullah II Ibn Al Hussein

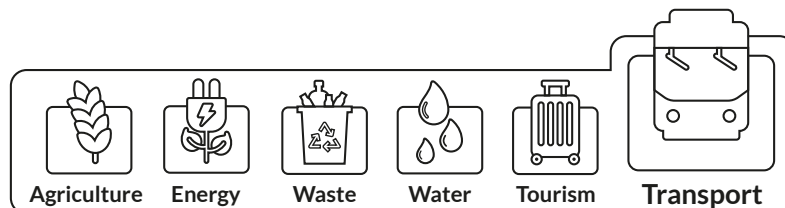
Economic leadership is by definition forward-looking. And forward-looking engagement will send a powerful message, a message of hope for my people and for yours.



TRANSPORT SECTOR



Green Growth National Action Plan 2021-2025



Foreword by the Minister of Environment

The Ministry of Environment has been taking solid action to support Jordan's green growth transformation. In 2017, the Cabinet approved the National Green Growth Plan, which established green growth as a top national priority. Jordan's green growth vision – economic growth which is environmentally sustainable and socially inclusive – puts a strong emphasis on the importance of building resilience. This is needed for our economy to be able to absorb external shocks such as the negative consequences of COVID-19, and the ability to restore itself and continue growing.

In this context, I am proud to present the next step in implementing this vision, the Green Growth National Action Plan 2021-2025. The development of this plan lies at the heart of our continuous efforts and ambitions to support environmental and climate action in Jordan, while also achieving our sustainable economic growth objectives.

During the process of developing this plan, the Ministry of Environment has taken impressive efforts to strengthen its partnerships with the government institutions responsible for governing the six green economy sectors identified in the Jordan Vision 2025. These include: Agriculture, Energy, Waste, Water, Tourism and Transport. Through a deeply collaborative approach, we were able to identify 86 priority enabling policy actions and projects that can trigger green growth. Many of these actions are ready for the support of donors, partners, and private sector investors.

Our world is facing the most challenging economic circumstances in a century as we work to contain the COVID-19 pandemic and adapt to a new normal way of life. As for our Kingdom, I am proud to say that the government acted decisively to stop the spread of the virus, implementing measures that saved potentially thousands of lives. However, response has come at a cost, with our economy and the economic security of our citizens once again at risk.

While infrastructure investments and donor support will be critical to stabilize this risk, private sector investment in the green growth vision is equally important. In many ways, the world is already moving toward a greener future. The spread of renewable energy, electric transportation, technology that saves water and energy resources, and innovations that promote the circular economy are taking off globally. The task for Jordan is harnessing these green developments into growth and employment-creation opportunities.

I would like to express my gratitude to the Global Green Growth Institute for their partnership and technical support in the process of developing Jordan's green growth agenda. The Ministry of Environment is committed to supporting green growth implementation in the 2021-2025 period, and beyond.



Dr. Saleh Al-Kharabsheh
Minister of Environment

Acknowledgements

The Green Growth National Action Plan 2021-2025 (GG-NAP) was developed by the Ministry of Environment with the support of the Global Green Growth Institute (GGGI), under the leadership of H.E. Dr. Saleh Al Kharabsheh, Minister of Environment and benefited significantly from the effective directions of H.E. Eng. Ahmad Al Qatarneh, the Secretary General of the Ministry of Environment. Tremendous support was provided by the Technical Advisor to the Minister and Director of the Green Economy Unit, Dr. Jihad Alsawair.

Special acknowledgment goes to the sector focal points at the six key line ministries for their extensive input and coordination support throughout the development process. Appreciation also goes to the GGGI for their technical assistance throughout the project and their continued commitment to support Jordan's transition to a green economy.

The GG-NAP required a vast amount of expertise, research, consultation, and effort to complete. The finalization of the document would not have been possible without the dedication of all the individuals and organizations who worked together throughout the development process. We would like to express our deepest appreciation to those who have worked on shaping and guiding this action plan over the past two years.

Appreciation also goes to all the entities that were integral to the success of this report, as they generously provided the project team with their knowledge and expertise. These include: Prime Ministry, Ministry of Planning and International Cooperation, Ministry of Agriculture, Ministry of Energy and Mineral Resources, Ministry of Water and Irrigation, Ministry of Local Administration, Ministry of Transport, Ministry of Tourism and Antiquities, Ministry of Public Works and Housing, Ministry of Industry and Trade, Ministry of Finance, Jordan Renewable Energy and Energy Efficiency Fund, Cities and Villages Development Bank, Greater Amman Municipality, Aqaba Special Economic Zone Authority, Jordan Enterprise Development Corporation, the Jordan Chamber of Industry, Jordan Chamber of Commerce, Association of Banks in Jordan, Higher Council for Science and Technology, Royal Scientific Society, Department of Statistics, National Agriculture Research Center, Water Authority, the Jordan Valley Authority, GIZ, UNDP, NDC Partnership, EBRD, EU, AFD, FAO and World Bank.

Lastly, special thanks to the hundreds of individuals who participated in meetings, workshops, reviews, etc. for providing valuable information and feedback during the drafting process. This contribution in the interest of supporting the Government of Jordan and its green growth ambitions is sincerely appreciated.

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List of Abbreviations

AFD	French Development Agency	LTRC	Land Transportation Regulatory Commission
AVID	Amman Vision Investment and Development	LNTS	Long-term National Transport Strategy
BRT	Bus Rapid-Transit	MEMR	Ministry of Energy and Mineral Resources
CIP	Capital Investment Plan	MoEnv	Ministry of Environment
CO₂	Carbon dioxide	MOPIC	Ministry of Planning and International Cooperation
DOS	Department of Statistics	MoT	Ministry of Transport
EBRD	European Bank for Reconstruction and Development	NDC	Nationally Determined Contributions
EMRC	Energy and Minerals Regulatory Commission	NGO	Non-Governmental Organization
EV	Electric vehicle	NOx	Nitrogen oxides
GAM	Greater Amman Municipality	PM_{2.5}	Atmospheric particulate matter that have a diameter of less than 2.5 micrometers
GDP	Gross Domestic Product	PM₁₀	Atmospheric particulate matter that have a diameter of less than 10 micrometers
GG-NAP	Green Growth National Action Plan	PPP	Public-private partnerships
GGGI	Global Green Growth Institute	SDG	Sustainable Development Goal
GHG	Greenhouse gas	SOx	Sulphur Oxides
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit	TMMP	Transport and Mobility Master Plan
HDV	Heavy-duty vehicles	UNFCCC	UN Framework Convention on Climate Change
ITS	Intelligent Transport System		
JBRIMP	Jordan Bus Restructuring Interim Master Plan Implementation		

About the Green Growth National Action Plan 2021-2025

Jordan's primary national development strategy Jordan Vision 2025 has set high ambitions for the country's socioeconomic development in the 2015-2025 period. With this strategy, Jordan hopes to achieve an economic growth rate of 7.5% in 2025, while striving to bring the poverty and unemployment rates as low as 8% and 9.17%¹, respectively. To achieve this vision, the government has defined a set of priorities and actions based on strong private sector development and resilience to external economic shocks. While the environment and climate change are not central features in the Jordan Vision 2025, several environmental priorities are addressed, including climate change adaptation, water and energy efficiency, waste management and natural resource protection. Importantly, the document calls for the development of the green economy in six targeted sectors: Energy, Transport, Water, Waste, Agriculture and Tourism.²

Throughout 2018 and 2019, Jordan's economy experienced a steady but low growth, with real GDP at just under 2.0%. Substantial efforts have been taken to address the central government's debt, which reached 99.1% in 2019, including through introducing fiscal reforms such as the passage of the 2019 Income Tax Law.³ However, in early 2020, Jordan, like the rest of the world, was shaken by the global COVID-19 pandemic. The implementation of public health measures to limit the spread of the virus brought the economy to a standstill, leaving many Jordanians worse-off.⁴ This new economic situation poses a significant risk to Jordan in the short term. With an unemployment rate of 19%⁵ at the end of 2019 and a slowdown of business-as-usual economic activity, families and small business will struggle

to make ends meet.⁶ High public debt and a likely reduction in foreign investment and tourism sector revenues will further test the long-term resilience of the economy. The economy is now estimated to shrink by about 3.5%, unemployment is expected to exceed 20%, and pressures on natural resources (particularly water) and vulnerable communities to intensify.⁷

This unprecedented set of circumstances is a serious challenge in the short term, but it presents an opportunity for the Government of Jordan to refocus its efforts on designing an economic growth approach that will foster long-term resilience. Green growth is one strategic approach that can support this effort. The Ministry of Environment began developing the Green Growth National Action Plan 2021-2025 in late 2018 as a next step toward implementation of the recommendations in the National Green Growth Plan, under the request of the Cabinet of Ministers. The GG-NAP outlines sector-level green growth frameworks and actions for the Agriculture, Energy, Tourism, Transport, Waste and Water sectors to support implementation of Jordan's green growth vision and strengthen future ability to recovery and contain shocks from catastrophic events such as COVID 19.

The Green Growth National Action Plan 2021-2025 lays out pathways for sustainable development that will increase resilience, strengthening Jordan's capacity to contain shocks and recover from catastrophic events such as COVID-19.

¹ GoJ. "Jordan 2025: A National Vision and Strategy," 2015.

² GoJ. "Jordan 2025: A National Vision and Strategy," 2015.

³ The World Bank. "Jordan's Economic Update – April 2020," 2020.

⁴ Reuters. "Many Jordanians struggling as country emerges from COVID-19 lockdown, U.N. agency says," 2020.

⁵ Department of Statistics, 2019.

⁶ UNDP. "Impact of COVID-19 on Households in Jordan," 2020.

⁷ The World Bank. "Jordan's Economic Update – April 2020," 2020.

Green growth, defined as “**Economic Growth that is environmentally sustainable and socially inclusive**”,⁸ is a multi-sector development approach that is aligned with both the 2030 Sustainable Development Agenda and Jordan’s Nationally Determined Contributions (NDC) under the Paris climate change agreement of 2015. In 2017, as a first step towards achieving green growth in Jordan, the Cabinet of Ministers

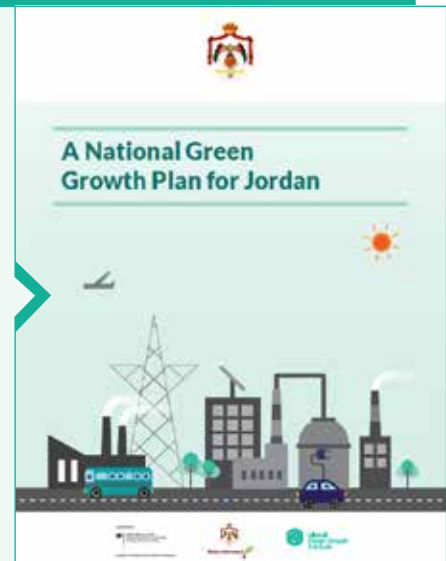
approved the report “A National Green Growth Plan for Jordan” (NGGP). Having received a special mention by the League of Arab States for being a best practice example to be replicated in the region, the NGGP assesses Jordan’s green growth potential and creates a roadmap to achieve a green economy transition in Jordan through strategic direction and recommendations (Box 1).

BOX 1

About the National Green Growth Plan for Jordan

The NGGP charts out a plan for Jordan to achieve an expanding yet sustainable and resilient economy that ensures the creation of green jobs for its citizens and increased investment in green projects. The NGGP uses a cost-benefit analysis approach to identify the challenges and opportunities for project implementation and focuses on tackling these barriers in the six green growth sectors: Agriculture, Energy, Tourism, Transport, Waste and Water. **Four driving principles of green growth are identified and mainstreamed across the actions in the Green Growth National Action Plan 2021-2025:**

- Transparent governance processes and enforcement of legislation
- Mechanisms to incentivize green growth
- Integrated planning processes that value societal impacts
- Behavior shifts and capacity building



To achieve the strategic vision laid out in the NGGP, the Ministry of Environment (MoEnv) worked in partnership with key national stakeholders to develop the **Green Growth National Action Plan 2021–2025** (GG-NAP). The GG-NAP is presented through a series of six national action plans that serve as sector-level green growth agendas. Each GG-NAP provides implementable actions to achieve the five national green growth objectives and embody the four driving

principles of green growth implementation (see Box 2). Detailed descriptions of priority policy and investment actions are included in the sector action plans, which will serve as the core of Jordan’s green growth, climate change and sustainable development agendas in the 2021 to 2025 period. Some of these are already under consideration by donors and investors. Many are included in Jordan’s NDC Action Plan and are climate finance opportunities.

⁸ Global Green Growth Institute. “GGGI’s Strategy 2030.” 2019.

BOX 2

Why the Green Growth National Action Plan 2021-2025?

The next step towards implementing the recommendations of the National Green Growth Plan for Jordan, the Action Plan for Agriculture, Energy, Tourism, Transport, Water, and Waste sectors:

1 **Elaborates and mainstreams green growth, climate change and sustainable development objectives into sectoral strategic frameworks.** This will encourage formulation of greener projects, and the implementation of policies that will strengthen the enabling environment for greener investment and private sector development. These priorities are aligned with the SDGs and the NDC Action Plan⁹ as well as national sector-level priorities, which will further prepare the government to mainstream sustainable development into the post-*Jordan Vision 2025* national development plan.

2 **Strengthens cross-sector collaboration.** Multi-stakeholder coordination and collaboration is central to designing and implementing green growth actions, as it can maximize co-benefits. The overall development process and the actions in each sectoral plan were intentionally designed to enhance such collaboration. Such activities lead to increased awareness and behavior change among decision makers, which can further strengthen the enabling environment for future investment in green growth.

3 **Emphasizes the importance of improving the enabling environment for green growth.** During the initial phase of green growth implementation in Jordan, substantial focus on the enabling environment is needed. Each action description identifies the enabling actions (such as supporting technical assistance programs) required for the responsible institution to be more successful in securing investment for implementation – either from public budget, private sector investors or donors.

The development of the action plan was undertaken through a highly collaborative approach between the Ministry of Environment and the line ministries responsible for guiding each sector. Sector-level green growth focal points were established and ministerial leadership was engaged through the Higher Steering Committee for Green Economy to secure endorsement. This experience demonstrated the important and growing role the Ministry of Environment plays in facilitating action across different issue areas. The network of green growth and climate action advocates developed in recent years is a powerful tool for implementing green growth in Jordan.

The GG-NAPs were developed with technical support from the Global Green Growth Institute (GGGI), who worked with the Ministry of Environment to conduct wide-ranging stakeholder consultations in 2018 and 2019. The strategic objectives, sector sub-objectives and actions were identified and formulated through an iterative process linked as closely as possible to existing sectoral priorities. Non-government stakeholders and experts were also consulted to ensure alignment with broader sectoral priorities, and to bridge local context and international best practice.

⁹ Clima-Med EU. "[Jordan approves NDC Action Plan to achieve the implementation of its commitments to the Paris Agreement](#)." 2019.

Figure 1 shows a summary of the green growth planning and implementation in Jordan.



FIGURE 1
 Green Growth Planning and Implementation in Jordan

Executive Summary

The **Transport Sector Green Growth Action National Action Plan 2021-2025 (GG-NAP)** outlines a green growth framework and actions for the sector aligned with the National Green Growth Plan (NGGP), Jordan Vision 2025, and Nationally Determined Contributions (NDCs) under the Paris agreement.

At the heart of the green growth approach lies the leveraging of the sector's resilience through economic growth that is environmentally sustainable and socially inclusive. The GG-NAP outlines five national green growth objectives on which the *Transport Sector GG-NAP* was developed:

1. Enhance Natural Capital
2. Sustainable Economic Growth
3. Social Development and Poverty Reduction
4. Resource Efficiency
5. Climate Change Adaptation and Mitigation

From these five national objectives, the Transport Sector GG-NAP identifies 18 sector sub-objectives that serve to mainstream the overarching green growth objectives into transport sector policies and investments.

Strengthening the sustainability of Jordan's transport sector is critical to achieving its climate change targets as well as its economic growth and social development objectives. The transport sector contributes to 16% of the country's total greenhouse gas emissions, making it the second-largest contributing sector.¹⁰ Access to public transport continues to be a challenge in Jordan, with citizens increasingly dependent on individual passenger vehicles for their transport, at an increasing rate of 5.3% per year.¹¹ This situation contributes to increasing fossil fuel use, ambient air pollution and restricted access to employment opportunities, education and markets.

A sustainable transport sector is a critical building block of a green economy. Jordan's transport sector generates over 9% of its GDP and employs nearly 7.6% of the labor force.^{12,13} Due to the rapid development of the industrial and service sectors, and the increase in population, demand for transport services is expected to grow by between 5% and 6% annually up to 2030.¹⁴ At the same

time, Jordan is considered a regional logistics hub with 62% of all cargo payload depending on road transport, followed by 10% for aviation and 3% for maritime transport. Road transport also accounts for 70% of the sector's total gross value added.¹⁵ Transformation of Jordan's road transport sector can open new economic opportunities while contributing environment and social co-benefits.

Transport is a primary infrastructure and service sector required for other economic sectors to function. Investing in sustainable transport, therefore, is a critical growth enabler.¹⁶ The Transport Sector Green Growth National Action Plan 2021-2025 has been developed with this aim in mind, and would lead to the following transformational impacts:

- Increase access to public transport services (and reduce reliance on individual car ownership) through an increase in private and public funding
- Increase public-private dialogue and collaboration in key transport sub-sectors, including tourism and logistics
- Enhance the enabling environment for Jordan's transition toward electric mobility
- Contribute to a reduction of transport-sector GHG emissions and support the implementation of Jordan's NDC

The Ministry of Environment and the Ministry of Transport worked in partnership with the support of national stakeholders and the Global Green Growth Institute to identify 13 priority actions to achieve green growth through the transport sector as shown in Table 1. The implementation of these actions is estimated to cost USD 167,000,000, which will require a mix of public, private sector and donor support for implementation. The actions include:

- **7 investment preparation and demonstration actions.** These projects are at various levels of readiness: some require feasibility analysis, while others are investment-ready. Many are suitable candidates for public-private partnerships or direct private sector investment, and others are opportunities to leverage climate finance.

¹⁰ MoEnv. "Jordan's Third National Communication on Climate Change." 2014.

¹¹ GoJ. "Jordan Traffic Accidents Annual Report 2018". 2019.

¹² GoJ. "Jordan 2025: A National Vision and Strategy" 2015.

¹³ JIC. "Transportation and Logistics Sector in Jordan" 2018.

¹⁴ MoT & UNECE. "Transport in Jordan Strategies, Challenges and Trends" 2014.

¹⁵ DOS. "Jordan Transport Statistics," 2017. Note: % of gross value added for land transport excluding transport via railways.

¹⁶ Center for International Development at Harvard University. "Jordan: The Elements of a Growth Strategy Ricardo," 2019.

- 6 enabling policy and institutional reform actions.** Given current gaps in available fiscal resources, these actions intend to attract investment by address policy barriers and capacity gaps that lead to higher costs, risk levels or uncertainty in decision making. These include programs to support innovation, institutional reform and coordination.

12 out of 13 of these actions contribute to the objective of Climate Change Adaptation and Mitigation, which are considered “Climate Action Priorities”, some of which can also be found in Jordan’s NDC Action Plan and forthcoming Green Climate Fund Country Programme.

TABLE 1
Summary of Jordan’s Transport Sector Green Growth Action Plan 2021-2025

#	Action Title	Total Estimated Implementation Cost (USD)	Relevant Green Growth Objectives				
			Enhanced Natural Capital	Sustainable Economic Growth	Social Development and Poverty Reduction	Resource Efficiency	Climate change Mitigation and Adaptation
TR01	Develop and/or update Transport and Mobility Action Plans and Capital Investment Plans for the secondary metropolitan areas of Mafraq, Zarqa, and Irbid	5,000,000		x	x		x
TR02	Approve and Activate the National Public Transport Fund and identify mechanisms to raise capital for public transport infrastructure	51,000,000		x	x		x
TR03	Implement transport sector governance enhancement program and reform agenda to increase the effectiveness and efficiency of the transport sector policymaking process	1,000,000		x	x		x
TR04	Scale up the provision of public-school bus services in all municipalities (Scale-up Smart Move Project)	15,000,000	x	x	x		
TR05	Implement a pedestrian green infrastructure enhancement program in local commercial areas and near public transport	25,000,000	x		x		x
TR06	Develop a public-private dialogue and roadmap for improving road transport services linked to the tourism sector	1,000,000		x			x
TR07	Support the deployment of Intelligent Transportation Systems (ITS) to allow a modal and fare integration of the public and private transport systems in the city of Amman	9,870,000	x	x			x
TR08	Establish a national center of excellence and capacity building program for sustainable transport	1,000,000		x			x
TR09	Develop a joint public-private strategy and roadmap to improve the environmental sustainability of the logistics sector	1,000,000		x			x
TR10	Develop and implement a public-private partnership for improved parking management in Amman	11,000,000		x	x	x	x
TR11	Develop a national electric mobility strategy and action plan	1,000,000	x			x	x
TR12	Design and implement a public transport electric mobility pilot and capacity building program in Amman	5,000,000	x			x	x
TR13	Establish low-carbon municipal bus fleets for Irbid, Zarqa and Madaba municipalities	22,000,000		x	x		x



1. A Green Growth Framework for the Transport Sector

Green growth is a new strategic approach for the Government of Jordan that integrates principles of inclusive, sustainable economic growth into the existing national context and priorities. Implementing this green growth approach will allow Jordan to achieve its socioeconomic development targets while simultaneously addressing environmental risks and climate change – all of which are critical to achieving the Sustainable Development Goals, as shown in Figure 2 below. At the outset of the green growth planning process, visioning exercises and consultations were held with national stakeholders through which **five national green growth objectives** were established.¹⁷

These objectives reflect Jordan's unique institutional setup, political and economic realities, and long-term growth ambitions. National-level plans and strategies were reviewed and used as inputs to guide and shape the objectives, which were later developed into sector-level sub-objectives (see Chapter 3). The *Transport Sector GG-NAP 2021-2025* was developed as a partnership between the Ministry of Environment (MoENV) and the Ministry of Transport (MoT), with green growth focal points established within the MoT and Greater Amman Municipality (GAM) to ensure consistent feedback from the technical and management levels.



FIGURE 2
 Relationship between the Five National Green Growth Objectives and the Sustainable Development Goals

¹⁷ This process reflected and built on the 5 green growth outcomes proposed in the National Green Growth Plan.

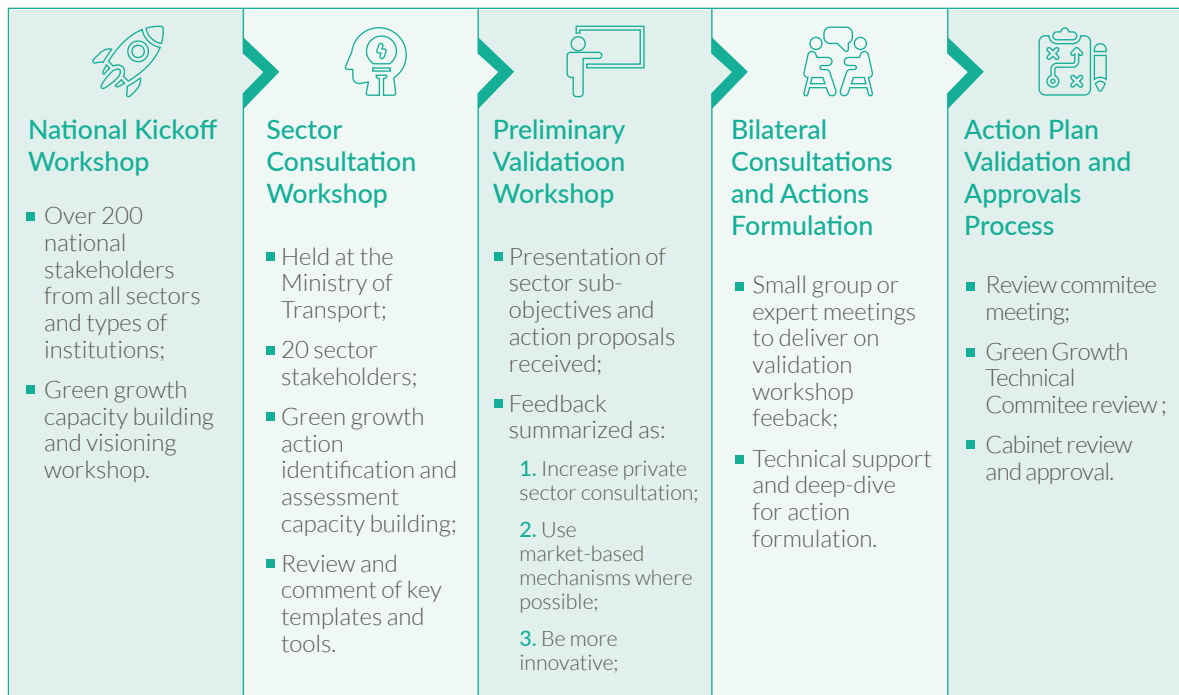


FIGURE 3
Process for Developing the *Transport Sector GG-NAP*

Figure 3 shows the process for developing the transport sector GG-NAP. The Transport Sector is defined in the Ministry of Transport’s **Long-term National Transport Strategy 2016-2030** as all transport activities, including road, rail, maritime, civil aviation transportation. The strategy also has a focus on expanding the roads sector, improving urban transport, and enhancing the logistics industry¹⁸. For the purpose

of this action plan, the focus was placed on the road and logistics-related sub-sectors in accordance with the guiding sector strategy. The following sections describe the relationship between each of Jordan’s national green growth objectives and this definition of the transport sector. An assessment of Jordan’s performance against these objectives in Jordan’s transport sector follows in Chapter 2.

1.1 Enhanced Natural Capital

Jordan’s first national green growth objective is to enhance the country’s natural capital. For that purpose, it aims to improve the quality and quantity of natural resources used to generate economic growth and provide ecosystem services that support economic activities.

Transport sector activities have implications on the quantity and quality of natural capital, defined as the “stock of natural assets which include geology, soil, air, water and all living things”¹⁹. For example, land and soil pollution caused by acid rain is linked to Sulphur Oxides (SOx) emissions from vehicles, as well as to the road construction process. The presence of SOx in the atmosphere can also have detrimental impacts on freshwater resources by causing their acidification.

Furthermore, road traffic can interfere with wildlife, leading to the destruction of ecosystems and disturbance of natural habitats, harming biodiversity, and impacting ecosystem services. Pollution from the maritime transport sector can also lead to harmful impacts on the marine natural environment. On the other hand, enhanced natural capital and improved ecosystem services contribute to the safeguarding of transportation infrastructure.

For example, nature-based design of urban roads and sidewalks can improve their long-term performance.

Sustainable Development Goals: 6 (Clean Water and Sanitation), 14 (Life below Water), 15 (Life on Land).

¹⁸ Ministry of Transport. Development of a Long Term National Transport Strategy for Jordan, 2016.
¹⁹ World Forum on Natural Capital. “What Is Natural Capital?”

1.2 Sustainable Economic Growth

Jordan's second national green growth objective is to ensure sustainable economic growth. In particular, the aim is to improve the enabling environment for the creation of long-term, inclusive socioeconomic development, as detailed in the Jordan Vision 2025.

Government policy influences the rate, scale, and quality of economic growth by shaping the rules and incentives for investment and commerce. Governments organize and reinforce markets, rationalize public investment, promote innovation, and guide the development of the private sector. Policies to support sustainable growth will, therefore, promote sustainable consumption and production processes and the establishment of green enterprises. A key objective is creating effective and efficient fiscal and market-based mechanisms.

The way in which transport systems are developed have implications for long-term economic development.

Access to transportation is a necessary condition for the trade of goods, the movement of people from home to school or work, and the exchange of ideas and cultures across distance and time. A well-designed transport system is a precondition for economic development and can positively affect productivity and competitiveness. As such, transport systems are a fundamental component of the national development agenda. Conversely, people's access to transport services is heavily influenced by the economy. Economic growth increases transport demand, not only in terms of passenger and trade volumes but also in terms of distances traveled. Transport is also an

important sector for many economies as it is a source of employment, revenue, and investment. Developing green and sustainable transport is therefore critical to ensuring sustainable economic growth.

Because transport sector projects are capital intensive, public subsidization of the transport sector is often needed to help finance investment and ensure a basic level of service provision. In a situation where the government cannot shoulder the costs, private sector can play a strong role in transport sector development. Close collaboration in the design and implementation of the national transport sector development agenda and finance planning is critical. Government decision makers may be reluctant or unable to prioritize fiscal resources or instruments to promote investment in transport, restricting the use of precious limited government revenues for expensive capital-intensive transport projects that have a high level of actual or perceived risk associated with them. Therefore, decision makers need access to the latest information and gender-sensitive data regarding transport infrastructure, and use risk reducing measures (such as the use of public-private partnerships, blended finance, and others). Public investment and subsidization of the transport sector can often result in economic ripple effects, and the decision to invest (or not) requires deep cost-benefit analysis.

Sustainable Development Goals: 8 (Good Jobs and Economic Growth), 9 (Industry, Innovation and Infrastructure), 16 (Peace, Justice and Strong Institutions).

1.3 Social Development and Poverty Reduction

Jordan's third national green growth objective is to achieve social development and poverty reduction. To this end, it aims to increase the equity with which the benefits of economic development and access to services are distributed across society.

Social development and poverty reduction are central concepts to Jordan's long-term development agenda and are a core component of inclusive green growth. Achieving this objective requires special attention to reducing inequalities in society, unlocking access to opportunity and extending the benefits of growth to all members of society. Gender equality and women's

empowerment are policy agendas that help support social development and poverty reduction, and they are a critical part of overall economic growth. A 2015 McKinsey study found that women generate only 37% of global GDP, but that closing this gap could add between USD 12 and 28 trillion to the global economy.²⁰ In the MENA region, women generate only 18% of GDP, suggesting greater inclusion is a major economic growth opportunity. Furthermore, access for marginalized groups and those excluded from markets, services, and spaces is required for sustainable growth. Accordingly, green growth recognizes women and men with a sense of equity, and the poor and marginalized

²⁰ McKinsey Global Institute. "How advancing women's equality can add \$12 trillion to global growth," 2015.

as not simply vulnerable, but as active agents of change for more sustainable growth.

In the transport sector, this means implementing transport systems that provide all people with easier physical access to employment, markets, education, and other economic and social services, through which people can improve their economic and social situation.

Transport networks are one of the most important elements of a country's infrastructure, and they are key to reducing poverty and promoting equality.²¹ Public transport is critical in this regard, as it is one way the government can help provide opportunities to those members of society who cannot afford a private vehicle or the fuel to travel to work or school. Transport also contributes to social inclusion and community cohesion, as well-connected transport

systems facilitate interactions in society. The quantity and quality of physical connections between urban and rural areas and between major urban centers can increase the amount of interaction between communities. On the other hand, deteriorated streets and sidewalks affect the social cohesion of neighborhoods, cutting critical services to residents that can help bring communities together. Thus, well-designed, sustainable, and inclusive transport systems can promote social development and poverty reduction. Finally, the transport sector is also directly linked to citizen health and safety.

Sustainable Development Goals: 1 (No Poverty), 3 (Health), 4 (Quality Education) 5 (Gender Equality), 10 (Reduced Inequalities).

1.4 | Resource Efficiency

Jordan's fourth national green growth objective is to achieve resource efficiency. This can be defined as improving the efficiency – reducing the wastefulness – of the economy by achieving a higher efficiency in the production and consumption of economic outputs.

Traditionally, economic growth has been characterized by an initially high rate of natural resource consumption per capita, followed by a period of declining natural resource consumption past a certain rate of economic growth. However, with extreme population growth and the looming threat of global climate change, the global community has recognized the need to shift the economic growth trend towards more sustainable consumption and production – greater shared prosperity with less waste. As technology advances, the use of energy efficient, low-carbon transport technologies is becoming less financially and technically risky.

For example, there has been a global shift toward electric mobility, with most major car manufacturers preparing hybrid and fully electric models to reflect changing market demands, and the desire to shift away from fossil fuels. Many city governments are exploring, testing, and implementing hybrid and electric bus projects, with those at the forefront being able to use electric transport as a catalyst for large-scale energy system upgrades. Sustainability through energy efficiency is the future of transport globally, so greening the transport sector to reduce total energy consumption and improve resource efficiency will be fundamental to any national green growth agenda.

Sustainable Development Goals: 7 (Affordable and Clean Energy), 9 (Industry, Innovation and Infrastructure), 12 (Sustainable Consumption and Production).

²¹ World Economic Forum. "[Why We Need Gender Strategies in the Transport Sector](#)". 2015.

1.5 | Climate Change Adaptation and Mitigation

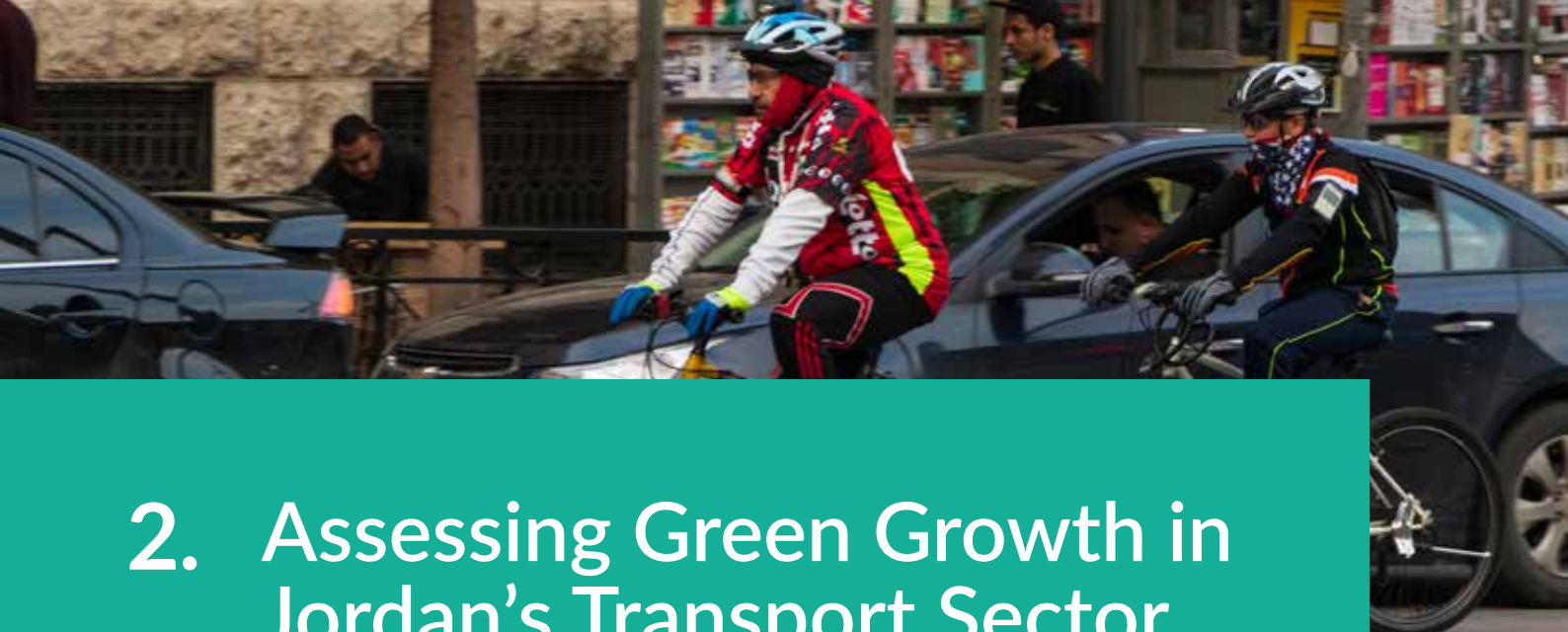
Jordan's fifth national objective is to achieve climate change adaptation and mitigation, which is expressed as improving Jordan's resilience to the effects of climate change and decreasing the country's total GHG emissions. This objective is consistent with the Paris climate change targets, which is the global community's plan to respond to the global climate crisis. Actions taken to address climate change adaptation and mitigation can also be found in Jordan's NDC to the Paris Agreement.

Climate change-related weather events and natural disasters threaten to destabilize traditional access to natural resources, which, among other things, threatens the livelihoods of the most vulnerable members of society, as well as entire economies. Mitigation through improving the energy systems and reducing transport sector emissions is an environmental imperative, a commitment to the

international community and an economic opportunity that must be pursued. Mitigation activities can appear to conflict with economic growth objectives, which require a greater scale of exchange of goods across distances, the achievement of which currently entails the use of fossil-fuel based technologies. Indeed, reducing transport GHG emissions will be challenging, since the continuing growth in passenger and freight activity could outweigh all mitigation measures unless transport emissions can be strongly decoupled from GDP growth.²² To achieve this, countries must invest in innovation and knowledge transfer to make low-carbon technologies affordable and available, and undertake economic planning that considers the full economic cost of climate change.

Sustainable Development Goals: 7 (Affordable and Clean Energy), 11 (Sustainable Cities and Communities), 13 (Climate Action).

²² Bednar-Friedl, Birgit, Brigitte Wolkinger, Martin König, Gabriel Bachner, Herbert Formayer, Ivo Offenthaler, and Markus Leitner. "Transport." Springer Climate, 2015.



2. Assessing Green Growth in Jordan's Transport Sector

2.1 | Transport Sector Green Growth Situation Analysis

Natural Capital. Air pollution in Jordan is growing at an average annual growth rate of 7% from 2006 to 2017²² as a result of the increasing number of vehicles on the road and an aging vehicle fleet. Overall, air pollution caused by the transport sector is worse in Jordan than the global average. Road transport contributes 99% of total transport Nitrogen oxides (NO_x) emissions against the global average of 81%. Road transport is also responsible for 98% of total black carbon, while the global average is 79%, and the annual mean of atmospheric particulate matter that have a diameter of less than 2.5 micrometers (PM_{2.5}) in Jordan is 38.8µg/m³, while the global average is 28.63µg/m³.²³ A 2007 air quality report showed that levels of black carbon in the air are higher in urban areas due to vehicles and heating, rather than in industrial areas.²⁴ It is estimated that air pollution costs the economy roughly 1.15% of the country's GDP, which includes the cost of treating related illnesses and productivity losses in urban areas (Amman, Zarqa, Aqaba, Fuheis, and Rashadeia) at approximately JD 7 million annually, as well as the cost of mortality associated with atmospheric particulate matter that have a diameter of less than 10 micrometers (PM₁₀), PM_{2.5}, and Sulfur dioxide (SO₂) pollutants (approximately JD 26–198 million),

and the cost of discomfort in urban areas due to the landscapes' loss of aesthetic value (approximately JD 2.7–3.3 million).²⁵ Poor air quality can tangibly affect biodiversity by placing some plant and animal species at risk, and it can also reduce the productivity of farms and forests.

Air pollution is aggravated by the use of low-quality fossil fuels for transport vehicles. Quality standards for fuels and vehicle emissions exist in Jordan, but they lack stringent monitoring and enforcement. The country has not adopted mandatory emissions standards for new vehicles. Jordan is considered to have an equivalent Euro III standard for its heavy-duty vehicles (HDV), which has a diesel sulfur content of 50ppm, far below international best practice.²⁶ For other vehicles, maximum emission levels have been set for carbon dioxide (CO₂) (maximum 10%), carbon monoxide (CO) (max. 5%), unburned hydrocarbons or black smoke (max. 600ppm) emissions, and the opacity of diesel emissions (max. 70%). Standards for LDVs and HDVs, inspection and enforcement are not sufficiently robust, although violators are legally required to pay a fine of up to 500 JD (in the case of polluting trucks).

²³ [Economic Indicators, Historic Data & Forecasts - CEIC](#), 2017

²⁴ Islamic Development Bank, "Low-Carbon Transport for Development - Trends and Recommendations for Islamic Development Bank Member Countries," 2018.

²⁵ Ababsa, Myriam, "Air Pollution," In Atlas of Jordan, 448–49, 2013.

²⁶ The World Bank & USAID, [Achieving Sustainable Development in Jordan](#), Edited by Raffaello Cervigni and Helena Naber, 2010.

²⁷ International Council on Clean Transportation & Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants, "Global Progress toward Soot-Free Diesel Vehicles in 2018," 2018.

Noise pollution due to road transport is a significant environmental problem in Jordan's urban areas. However, due to lack of data, it has not been well-quantified. In areas of East Amman, deteriorated streets and sidewalks have also exposed some neighborhoods to environmental hazards such as flooding and soil erosion. The construction of new road networks disturbs the soil structure and can lead to soil erosion and contamination²⁸.

Sustainable Economic Growth. The sector accounts for about 9% of the national GDP and is expected to grow 5-6% annually until 2030. Land transport accounts for roughly 70% of the transport sector's GDP, with passenger and freight road transport constituting the backbone of the national transport system.

Insufficient public transport, however, is undermining the sector's contribution to economic growth. Without adequate access to public transport services, citizens are forced to use private transport to travel to work, school, and commercial areas. Those who cannot afford private transport may forgo those activities altogether, with social and economic implications. 78% of youth, for example, point to the lack of access to public transport as a top justification for not participating in the workforce²⁹. On balance, the increased number of vehicles and frequency of use has resulted in a substantial increase in traffic congestion, leading to tangible economic productivity losses. Freight and regional transport have been constrained by multiple external shocks to the region in the past decade, including economic crises, as well as political unrest and conflict. Infrastructure and border management are other limiting factors for the freight transport sector, characterized by low capacity at land borders and at the port of Aqaba.³⁰ The absence of a national railway system combined with the low efficiency of land cargo transport has prevented the logistics and transport sector from achieving its economic potential.³¹

Population growth and economic development in Jordan have been accompanied by an increase in transport demand. This elevated demand is taking its toll on major urban areas and along key transport corridors, debilitating the performance of the roads and transport infrastructure. Based on recent forecasts, if business as usual continues, the transport

system will negatively impact the country's ability to undertake its daily economic activities by the end of this decade.³²

One of the key issues commonly raised by the government for the lack of adequate public transport is cost, amid severe competition for public financial resources to cover water and energy investments. The sector relies heavily on private sector investment and operation of large-scale transport infrastructure. Government-backed mass transport systems for passengers and freight could have a significant positive impact on the economy. Jordan has invested nearly USD1.7 billion over the last five years, with a relatively low return on investment compared to other middle-income countries.³³

Social Development and Poverty Reduction. The rate of development of Jordan's public transport services has not matched the urban growth rate, resulting in a de facto decrease in public transport coverage. For example, about 59% of Amman's area is currently unserved by public transit and approximately 37% of the total population has low access to public transport services.³⁴ Moreover, there is no measurable increase in the quality of service, with the public transport system still lacking reliable information on timetables, frequencies, stations, bus routes and stops. In Amman, for example, users of public transport spend nearly USD 80 per month simply waiting for public transport modes, equal to roughly 12% of the average income.³⁵

Public transport systems are crucial to increase social development and reduce poverty, and can have implications on the basic health and safety of citizens. The LNTS has prioritized road transport safety as a key issue, and the recent development of the **Road Traffic Safety Strategy and Action Plan** is a first step toward improving the situation. Although traffic safety shows continuous improvements, the cost of traffic accidents in urban areas still generates considerable economic losses of about JD 313 million (2017).³⁶ Jordan's transport sector employs 7.6% of the total labor force, equal to about 126,000 jobs³⁷, and in 2017 the transport and logistics sector accounted for 11.7% of all employment informality.³⁸ Informality is a serious problem in Jordan because it threatens the health, safety and economic well-being of the labor force.

²⁸ MoEnv & GAM, "The Amman Climate Plan A vision for 2050," 2019.

²⁹ International Youth Foundation, "Transport Services and Their Impact on Youth Employment and Development in Jordan," 2014.

³⁰ Ministry of Transport, Development of a Long Term National Transport Strategy for Jordan, 2016

³¹ The Hashemite Kingdom of Jordan, "Turning the Corner: Jordan's path to growth 2019-2020," 2019.

³² Jordan Long-term National Transport Strategy and Action plan

³³ World Bank, "Strategic Assessment: The 2019 Project Pipeline for Jordan and Investment Opportunities," 2019.

³⁴ Al-Masaied, Hashem R, and Amir Shtayat, "Performance of Urban Transit in Jordan," Journal of Engineering Research and Applications 6, no. 83 (2016): 7-12.

³⁵ Al-Masaied, Hashem R, and Amir Shtayat, "Performance of Urban Transit in Jordan," Journal of Engineering Research and Applications 6, no. 83 (2016): 7-12.

³⁶ The Jordan Times, "Traffic-Related Fatalities Record 16.6% Drop in 2018," 2019.

³⁷ Jordan Investment Commission, "Transportation & Logistics," n.d.

³⁸ UNDP, "The Informal Sector in the Jordanian Economy," 2013.



Many employers choose not to register their employees in order to avoid paying social security benefits, which has an impact on their safety and livelihood opportunities.³⁹

Generally, transport facilitates access to the labor market, healthcare, and education services, which are critical to livelihood creation and general welfare. In 2018, 47% of Jordanian women noted that they decline employment due to a lack of viable public transport,⁴⁰ demonstrating the potential of the transport sector to bridge the gender gap in the Jordanian labor market. Currently, only 15% of the female population is active in the work force.⁴¹

Resource Efficiency. Jordan's growing population and urbanization is placing pressures on resource use and infrastructure-based services, including transport. The transport sector is a primary user of energy, responsible for 29% of final energy consumption, making it central to the country's overall energy-economy equation.⁴² Planning of urban transport systems is at the center of national energy strategies and plans, including the updated Master Energy Strategy 2020-2030.

Energy consumption from Jordan's transport sector has increased from 41% in 2010 to 50% in 2017⁴³. The energy products consumed by the sector include gasoline, fuel oil, diesel, and jet fuel. The primary consumer is passenger transport, which accounts for 57% of transport energy use.⁴⁴ Jordan's Ministry of Energy and Mineral Resources (MEMR) leads the country's energy reform agenda, aiming to reduce its

dependence on fossil fuel energy imports. Through this reform, the country has embraced sustainable energy, with aims to substantially increase its share of renewable energy for electricity production and implementing widespread energy efficiency measures. Reducing Jordan's reliance on energy imports and greening the transport sector will increase the country's resilience to external shocks, such as fluctuating commodity prices and global/regional economic challenges. This could also free up public resources that can be reallocated to other sustainable development priorities.

Various factors, however, are limiting Jordan's ability to achieve its energy efficiency objectives through the transport sector. First, the rapid increase in private passenger vehicles (as described above) is rapidly increasing demand for gasoline and diesel fuel. Second, policy integration between transport authorities is a challenge. For example, the Land Transportation Regulatory Commission (LTRC) is responsible for regulating the transport sector by defining routes, issuing permits, and controlling the operations and services sector, whereas vehicles inside the cities (especially small cars) follow different regulations which are developed and enforced mostly by municipalities.⁴⁵ Third, some of the current fiscal policies limit the development of alternative green growth options, such as the electrification of the transport sector. For example, Jordan recently increased the customs tax on hybrid and electric cars from zero to 25%.⁴⁶ However, due to current fiscal pressures, maintaining a consistent incentive policy for more energy efficiency modes has been difficult to achieve.

³⁹ The Jordan Times, "Working Conditions 'Still Weak' in Jordan – Study" 2017.

⁴⁰ Friedrich Ebert Stiftung and Sadaqa, "Gender in Public Transportation" 2018.

⁴¹ Jordan, Government of, "Jordan 2025: A National Vision and Strategy," 2015.

⁴² IEA, "Energy efficiency - The first fuel of a sustainable global energy system," n.d.

⁴³ Department of Statistics, 2019.

⁴⁴ ICF International/USAID, "Greenhouse Gas Emissions in Jordan," no. 2011 (2016): 2014–15.

⁴⁵ Energy Charter Secretariat, "Jordan, Regular Review of Energy Efficiency Policies 2010," 2010.

⁴⁶ Albawaba, "Surprise! Increase on Electric Vehicles' Tax in Jordan," 2019.

Achieving resource efficiency in the sector requires a shift towards less energy-intensive modes of transport. The uptake of hybrid and electric vehicles (EVs) has substantially increased in the last five years, with nearly 18,000 EVs on Jordan's roads at the end of 2018. Seeking to deliver on its commitment to lower the reliance on primary energy consumption, the government has provided some incentives for the purchase of EVs. Public fleets such as municipal service vehicles and taxis are starting to transition toward electric; the GAM has purchased 100 electric cars, as well as 30 electric taxis as a pilot, and continues to expand its electric public vehicle fleet. One of the major barriers is the lack of infrastructure to charge EVs. As a result, the Energy and Minerals Regulatory Commission (EMRC) passed a new mandate that stated no new gas stations would be licensed without having the facilities for charging EVs. From the onset of its regulation of the service in 2016, the EMRC has been able to license more than 18 charging stations.

Climate Change Adaptation and Mitigation. With resource security and equity linked to economic and political stability in Jordan, resilience to climate-related weather events is a top priority for the government. At the same time, the government of Jordan has committed to reducing overall GHG emissions by 1.5% by 2030 compared to 2010 levels, and they have promised to strive to achieve an additional 12.5%, conditional upon receiving aid from developed countries.

The transport sector is Jordan's second-largest source of emissions, at about 4,706 Gg CO₂ eq. (16.4% of total energy emissions and 22.5 % of bulk country's emissions) in 2006.⁴⁷ According to the 2014 GHG Inventory, 31% of Amman's GHG emissions came from the transport sector.⁴⁸ More specifically, the largest sub-sector of emissions was road transport.⁴⁹ Addressing GHG emissions from the transport sector requires the increase of public transport mode share, which currently stands at 11% in Amman. Air transport services and infrastructure are considered to be of high quality, thanks in large part to the successful expansion of the Queen Alia International Airport, which received International Organization for Standardization Airport Carbon Accreditation in 2013.⁵⁰

Climate-related disasters, such as extreme flooding or flash-flooding, are projected to increase in Jordan. This poses a risk to the sustainability of the transport sector as it may deter investment, and actions to adapt to this new reality are warranted. There are substantial economic, social, and ecosystem co-benefits associated with reducing GHG emissions and adapting to the impacts of climate change. By designing transport systems that take into consideration local circumstances, including weather, resilience to climate change can also be enhanced.

2.2 | Current Transport Sector Strategic Priorities

Jordan Vision 2025. This is the country's primary socio-economic development strategy, addressing the economic, social and governance challenges impeding Jordan's development and prosperity. Environment and climate change are not at the center of the Jordan Vision 2025's infrastructure development approach, and the concept of sustainable transport is not specifically mentioned in the priorities of the high-level plan laid out in the Vision. However, the sector is emphasized as a critical infrastructure sector, and public transport is noted as a critical priority. The Vision does recognize that strengthening the transport system is a way to support economic development, and that implementation of the LNTS would make a significant contribution to this end. The Vision

describes the "Transport and Logistics" sector as important for regional connectivity, employment, and its potential usefulness as a physical network to support humanitarian efforts in the region. Key objectives of the Vision's **targeted scenario by 2025** include:

- Updating and implementing national strategies for transport infrastructure – including a master plan for major priority projects, funding mechanisms and governorate-level transport planning;
- Improving road traffic safety, developing road networks and adopting key road traffic laws and regulations to improve the quality of roads in Jordan;

⁴⁷ MoEnv. "Jordan's Third National Communication on Climate Change," 2014.

⁴⁸ MoEnv & GAM. "The Amman Climate Plan A vision for 2050," 2019.

⁴⁹ Jordan Department of Statistics

⁵⁰ [Queen Alia International Airport Project](#).

- Ensuring energy efficiency when investing in transport modalities;
- Constructing a national railway network;
- Strengthening the regulatory environment to facilitate and enable Public-private partnerships (PPPs);
- Strengthening the capacity of PPPs, encouraging private investment in roads, toll systems, etc.;
- Improving sector contribution to GDP, increasing the number of buses per thousand people, and increasing citizen satisfaction with public transport services;
- Developing and improving trade facilitation, including transport infrastructure and logistics.

Long-term National Transport Strategy (LNTS)

2015-2030. The LNTS is Jordan's primary transport sector strategy and action plan. The LNTS details a strategic approach to improve transport services, and mainstreams economic, environmental, and social concepts throughout. The goal of this strategy is to create a transport system that can provide low-cost, safe, and affordable transport for citizens, as well as facilitate trade between governorates and regional neighbors, growing the economy and improving quality of life for citizens. The LNTS includes one high-level strategy each for road, rail, aviation, maritime/ports, public transport and freight transport, and cross-cutting issues (such as safety and environment). The LNTS highlights the importance of small-scale interventions, addressing fundamental implementation gaps, the role of policy and regulatory enforcement, and the role of citizen input in planning and investment.⁵¹ The key policy pillars included in the LNTS are:

- Completing the existing networks – identifying and addressing bottlenecks and fragmentation in the sector to improve implementation;
- Making the best use of existing facilities - emphasizing planning and network improvements rather than build substantial amounts of additional infrastructure;
- Pursuing a multimodal approach – developing a national rail network and links with the region;
- Combining infrastructure investments and policies – focusing on implementing policies that can offer high returns, but that also support implementation and success of long-term strategies and expensive infrastructure investments;
- Making the best of private participation in the transport sector – developing the regulatory environment to support private sector investment;
- Protecting the environment and reducing negative impacts – decarbonizing the sector, promoting innovation and safety standards, with a special emphasis on enforcement;
- Emphasizing the regional dimension – promoting Jordan as a regional trade destination;
- Having citizens at the core of the transport policy – improving mobility to contribute to livelihood creation and promoting inclusion and citizen participation in the decision-making process.

Jordan's existing national plans, strategies and policy documents add a further level of specificity to its priorities, many of which are linked to green growth (see Table 2, below).

⁵¹ Ministry of Transport. Development of a Long Term National Transport Strategy for Jordan, 2016.



TABLE 2
Green Growth Priorities found in Existing National Documents

Relevant plans and strategies for Transport Sector	Green Growth Objectives				
	Enhanced Natural Capital	Sustainable Economic Growth	Social Development & Poverty Reduction	Resource Efficiency	Climate Change Adaptation & Mitigation
Long-term National Transport Strategy and Action Plan	x	x	x		
National Road Safety Strategy	x		x		
Jordan Economic Growth Plan 2018 - 2022		x			
Transport and Trade Facilitation Strategy		x			
Energy Master Strategy		x		x	
Amman's Transport and Mobility Master Plan		x	x		
Jordan Vision 2025		x	x		
Jordan Bus Restructuring Interim Master Plan Implementation (JBRIMP)		x	x		
National Energy Efficiency Action Plan		x		x	x
National Strategy and Action Plan for Sustainable Consumption and Production in Jordan (2016-2025)				x	
NDC, Paris COP21					x
The National Climate Change Policy of the Hashemite Kingdom of Jordan 2013-2020					x

2.3 | Transport Sector Stakeholders

The **Ministry of Transport (MoT)** is the leading government institution responsible for strategic planning and guiding the development of Jordan's transport sector. MoT does not, however, have a direct responsibility for the implementation of projects, and relies on many other institutions to manage and operate transport infrastructure and services. Each mode of transport (rail, road, maritime, civil aviation, and logistics) has their own set of institutions responsible for planning and managing infrastructure development, regulation and service provision. MoT is responsible for rail, civil aviation, and maritime transport, where the Ministry of Public Works and Housing is responsible for road development. Municipalities are primarily responsible for planning and implementing public transport projects, but support is also provided by Land Transport Regulatory Commission (LTRC). Some special jurisdictions, such as the Aqaba Special Economic Zone Authority (ASEZA) and Petra Development and Tourism Regional Authority (PDTRA), are responsible for transport issues within their boundaries. Other important transport and transport-adjacent priorities are also being implemented, supported, and monitored by the following key stakeholder institutions (listed in alphabetical order):

Key Stakeholders

- Airport International Group
- Amman Vision Investment and Development (AVID)
- Aqaba Container Terminal
- Aqaba Ports Corporation
- Aqaba Railway Corporation
- Aqaba Special Economic Zone Authority (ASEZA)
- Civil Aviation Regulatory Commission

- Demand-responsive transport service providers (Careem, Uber)
- Development Zones Commission
- Drivers and Vehicles Licensing Department
- Forwarders Association Owners Syndicate
- General Union of Jordanian Bus Owners
- Jordan Hejaz Railway Corporation
- Jordan Investment Commission
- Jordan Maritime Commission
- Jordan Meteorological Department
- Land Transport Regulatory Commission (LTRC)
- Logistics service providers (Aramex, DHL, FedEx, etc.)
- Maan Nasel (NGO)
- Ministry of Energy and Mineral Resources
- Ministry of Environment
- Ministry of Finance
- Ministry of Public Works and Housing
- Petra Development and Tourism Regional Authority (PDTRA)
- Private sector tourism bus companies
- Royal Automobile Club of Jordan
- Sadaqaa (NGO)
- Syndicate of Jordanian Truck Owners
- Taxi Drivers Association
- Transport Services and Taxi Owners Union

Key Sector Donors and Development Partners

- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- European Bank for Reconstruction and Development (EBRD)
- Friedrich-Ebert-Stiftung (FES)
- Agence Française de Développement (AFD)
- Global Green Growth Institute (GGGI)
- UN Industrial Development Organization (UNIDO)



3. Transport Sector Sub-Objectives and Action Selection

3.1 | Transport Sector Green Growth Sub-Objectives

Revitalizing the national transport system towards greater sustainability is a priority reiterated in national plans and strategies, including the Jordan Vision 2025 and the MoT LNTS. A robust public transport system is considered a top national growth priority, receiving attention in the Jordan Economic Growth Plan 2018-2022, Amman's second TMMP, the Amman Climate Action Plan (ACAP)⁵² and the Amman Green City Action Plan.

Further operationalizing the five national green growth objectives described in Chapter 1 and assessed in Chapter 2, transport sector sub-objectives for each national objective were determined. These sub-objectives serve as a sustainable transport sector agenda which can be continually developed by national stakeholders.

Close coordination and collaborations with the MoT, GAM and MoEnv ensured alignment with sector priorities as laid out in the LNTS, and other sector-specific plans. Special emphasis was also given to establishing linkages with the country's cross-cutting environment and socio-economic strategies and plans. Where specific green growth concepts were not prominently mainstreamed into policies and strategies, global green growth best practices were incorporated into the objective and action levels.

The five national green growth objectives are translated into 18 sector sub-objectives for Jordan's transport sector as detailed in Table 3.

⁵² MoEnv & GAM. "The Amman Climate Plan: A vision for 2050," 2019.

TABLE 3
Transport Sector Green Growth Sub-Objectives

National Green Growth Objective	Transport Sector Green Growth Sub-Objectives
Enhanced Natural Capital	a. Reduce air pollutant emissions (PM _{2.5} , PM ₁₀ , NOx, and SOx) from road transport; b. Promote the use of green infrastructure in transport sector and investment planning.
Sustainable Economic Growth	a. Increase public funding for public transport infrastructure and service provision; b. Increase the gross value-added of the freight and logistics sector through sustainable services and infrastructure; c. Increase access to reliable, affordable, and safe public transport services in urban areas; d. Improve connectivity and accessibility for passengers and goods between and within governorates and key growth areas; e. Increase private sector participation in transport sector investments.
Social Development and Poverty Reduction	a. Increase access to reliable, affordable, and safe public transport services for all, including women, youth, and rural communities; b. Reduce the number of deaths related to traffic accidents and transport-related air pollution; c. Improve the working conditions for transport sector employees; d. Enhance the safety and walkability of pedestrian walkways in urban area; e. Reduce monthly average household expenditure on transport.
Resource Efficiency	a. Promote the use of electric and hybrid vehicles through strengthened regulations and incentives; b. Promote non-motorized transport modes and provide necessary infrastructure; c. Use technology to improve traffic conditions and aid in traffic management; d. Reduce the amount of waste generated in the transport sector.
Climate Change Adaptation and Mitigation	a. Reduce GHG emissions (CO ₂) from the transport sector; b. Promote the use of climate-resilient infrastructure in transport sector investment planning.

Climate Action Priority. Climate action – policies and investments which lead to climate change adaptation and mitigation – are key priorities for the Government of Jordan. Actions which are noted to contribute to the strategic objective of “Climate Change Adaptation and Mitigation” represent sectoral priorities that can also be found in the NDC Action Plan and/or the *National Adaptation Plan*⁵³. These documents, along with the GG-NAP, guide the MoEnv in planning and implementing its international climate change commitments, for which it aims to achieve 14% overall GHG emissions reductions by 2030, including 1.5% unconditional reduction against the baseline, with a 12.5% additional reduction target being conditional upon receiving financial and technical support from international donors and development partners.



Jordan's Nationally Determined Contribution

14% | GHG emissions reduction by 2030
1.5% unconditional | 12.5% conditional

⁵³ These priorities have been developed for MoEnv with the support of NDC Partnership and GIZ programs in Jordan.

3.2 | Translating Green Growth Priorities into Actions

Taking into account the priorities of stakeholders, the gap analysis performed, and the strategic planning exercises conducted, a prioritized list of investments and enabling actions were identified and validated by the MoEnv, MoT, GAM and GGGI. Ideas were solicited through an open call for ideas with key government and non-government stakeholders. Action proposals were received and reviewed using a multi-level screening tool from which priority interventions (policies, programs, and investments) were selected and presented at a national preliminary validation workshop in December 2018. The findings of this workshop revealed the preference by stakeholders to prioritize those with:

- Strong links to national green growth objectives;
- High levels of innovation or novelty in concept;
- Likelihood to attract private sector investment or develop the private market.

Bilateral and small-group consultations were conducted through 2019 to prioritize and formulate the actions proposed by sector stakeholders. This process included the assessment of feasibility, risks, and alignment with government priorities as per the feedback received in 2018, which improved the depth of analysis, input from private sector actors and local technical experts. The zero draft of the action plan was reviewed by an ad-hoc Transport Sector Green Growth Review Committee, hosted by the MoT. Endorsement was received by sector leadership in the MoT, and approval was received by the Cabinet of Ministers in early 2020.

For the purpose of this action plan, actions are presented in three ways: as **enabling actions**, as an **investment**, and as a combination of the two.

- **Enabling Actions.** These are considered to be any actions that will enable stakeholders (government and/or others) to be more prepared for future green growth policy or investment implementation. They are policy, strategy, research, and capacity building-oriented in nature. They can be implemented through a mixture of donor and government support. Donors would typically support implementation on a grant basis through technical assistance funds. Each action description contains the detailed rationale and strategic orientation which will allow Action Leads to develop funding proposals for these actions as priority green growth programs.

- **Investment Actions.** These are priority investment projects that support the achievement of national green growth objectives. Investments must be proven feasible from a technical, financial, and environmental standpoint. As such, they require proof of concept, a business model showing that an attractive return on investment is possible.

For enabling actions that do not lead to an investment, the estimated budget and status of financing of the action are noted in the action descriptions in Chapter 5. In these cases, the “No” box is checked under the “Action Leads to Investment” section of the action description. It is important to note that some technical assistance actions may lead to investment. However, for the purposes of this action plan, all actions that do not include feasibility analysis for a specific project or investment are assumed to not lead to an investment.

Estimated Budget for this Action	
Financing Secured	<input type="checkbox"/> Yes <input type="checkbox"/> No
Potential Source of Funding	
Action Leads to Investment	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> This action is an Investment opportunity
Estimated Investment Size	

For many green growth investments, limited feasibility analysis is available. In these cases, the action includes the development of the required analysis (feasibility studies, technical assistance, etc.) directly related to a potential or known investment opportunity. The “Estimated Budget for this Action” is noted in the description table, and the “Yes” box is checked in the “Action Leads to Investment.” In the case of investment opportunities that have feasibility analysis completed and are considered

ready for investment, the box “This action is an investment opportunity” is checked. In both cases an estimated budget for the implementation of the project/investment is given, based on the available information (such as a feasibility study, consultation with project designers, or best estimation).

Table 4 shows the types of actions found in the GG-NAP 2021-2025.

TABLE 4
 Types of actions found in the GG-NAP 2021-2025

Action Type	Description of Activities to be Implemented
Enabling Action	<p>Any action that will enable stakeholders (government and/or others) to be more prepared for future green growth policy or investment implementation.</p> <p>Activities, outputs, and milestones might include:</p> <ul style="list-style-type: none"> ▪ Policy analysis, recommendations, and reform ▪ Capacity building programs, public campaigns that increase awareness among a set of key stakeholders ▪ Knowledge exchange and learning ▪ Reforms to processes, procedures, and institutional setup ▪ Technical studies and analysis
Investments	<p>Any action that will lead to investment in a specific project that will support the achievement of one or more of the sector green growth sub-objectives.</p> <p>For demonstration or pilot projects, activities, outputs, and milestones might include:</p> <ul style="list-style-type: none"> ▪ Investment analysis and preparation activities ▪ Clarify the proof of concept (technical and financial aspects) of implementation of green growth projects ▪ Reform of specific policies or regulations required to attract investment ▪ Develop service models and business plans ▪ Inform replication or scale up <p>Investment-ready projects are considered ready for implementation between 2021 and 2025 based on available feasibility analysis.</p>

Action Priority Level. Actions that were considered low priority for green growth were not included in the action plan, and action descriptions were not developed. From the numerous ideas received, a limited number of detailed action descriptions were prepared and assessed according to the criteria below. Sector review committees and green growth focal

points at the relevant line ministries were asked to evaluate and validate the level of priority, and this is noted in each action form.

Table 5 shows the prioritization criteria for GG-NAP 2021-2025.

TABLE 5
Prioritization criteria for GG-NAP 2021-2025

Priority Level	Description
Low	<p>Low-priority actions are those which do not meet the adjusted criteria after the Preliminary Validation Workshop, meaning they:</p> <ul style="list-style-type: none"> ▪ Lack clear and substantial links to national green growth objectives ▪ Lack innovation and do not demonstrate added value to existing sector objectives, as outlined in national/sectoral policy documents ▪ Cannot be reasonably implemented given the available resources or capacity at the sector level in the 2021-2025 period <p><i>Low-priority actions have not been included in this action plan.</i></p>
Medium	<p>Action which:</p> <ul style="list-style-type: none"> ▪ Positively contributes to at least one of the national green growth objectives and sector sub-objectives ▪ Adds value to existing sector objectives (as outlined in national/sectoral policy documents)
High	<p>Action which meets all the “Medium” criteria, plus:</p> <ul style="list-style-type: none"> ▪ Encourages changes to the prevailing ‘business as usual’, triggering long-term, sustainable green growth transformation ▪ Impacts a large geographical area or segment of the population
Very High	<p>Action which meets all the “High” criteria, plus:</p> <ul style="list-style-type: none"> ▪ Considered a key milestone for future implementation of green growth actions, i.e., enabling actions that lead to improved and quantifiable green growth policies and investments ▪ Has strong private sector orientation, interest and/or ownership ▪ Resources have been identified for implementation (public, private, donor)



4. Implementation Arrangements

4.1 Action Implementation

Green Growth Implementation Principles. Successful implementation of this plan will require sector-level policy and institutional reform measures. The goal of these measures is to achieve:

- Greater strategic alignment and coherence among existing plans and strategies;
- Improved coordination between government institutions and stakeholders;
- More meaningful and frequent engagement of private sector, NGOs and other non-government actors;
- Stronger investment and strategic planning systems and processes, leading to stronger return on investments made in national development and economic growth;
- Technical capacity development within government institutions.

Roles and Responsibilities. Green growth is a unique development approach that will require a high level of collaboration between national stakeholders, which has been called out as both a

key challenge and opportunity in the NGGP. MoT is the leading institution responsible for overseeing the implementation of all policies and strategies for the transport sector, but most of the actions in this action plan require joint preparation and implementation across institutions, stakeholders, and sectors. The private sector, civil society actors and government agencies – such as the MEMR, GAM, municipal transport authorities, MoEnv and many more – are included as action implementation leads and support. Donors, development agencies and local Non-Governmental Organizations (NGOs) are needed to provide financial support, technical expertise and knowledge of local needs and context.

Table 6 shows the roles and responsibilities of various stakeholders for green growth implementation in Jordan.

TABLE 6
Roles and Responsibilities of Various Stakeholders for Green Growth Implementation in Jordan

Stakeholder	Roles and Responsibilities
Action Lead	<ul style="list-style-type: none"> Ensuring the action is successfully implemented within the planned time frame. This may include additional preparatory actions such as further consultations, resource mobilization (identifying potential donors, writing funding proposals, preparing project documents), coordinating stakeholders, and facilitating implementation (disbursing funding, etc.). Provide progress status reports as needed to the relevant focal ministry for M&E purposes. For investments, the Action Lead is the project owner.
Action Support	<ul style="list-style-type: none"> Support the Action Lead by providing technical feedback, in-kind or financial support, drafting and ideation support, and other collaborations during all phases of action planning and implementation.
Sector Green Growth Focal Points at the MoT	<p>Action Implementation</p> <ul style="list-style-type: none"> Serve as focal point for communications and reporting on Sector Action Plan progress with MoEnv. Support action implementation by supporting Action Leads with resource mobilization, coordination, data collection, etc. Ensure the policy/regulatory environment supports action implementation (with donor support if required). <p>Mainstreaming</p> <ul style="list-style-type: none"> Support mainstreaming activities and approaches that support green growth implementation into sector-level policies and investments. Serve as technical advisor to line ministry leadership on an ad-hoc basis (especially Secretary General sitting on the Higher Steering Committee for Green Growth). Facilitate partnerships with private sector and civil society institutions to support green growth planning and implementation. <p>Monitoring/Reporting</p> <ul style="list-style-type: none"> Provide quarterly status updates on the implementation of the action plan to MoEnv, Green Economy Unit (noting any challenges and requesting any needed support).
Ministry of Environment (MoEnv)	<p>Green Economy Unit</p> <ul style="list-style-type: none"> Work closely with Action Leads to provide policy analysis (undertaking policy review, cost-benefit analysis, supporting pre-feasibility analysis, conducting consultations to change policies or regulation) as needed to support implementation. Guide Jordan's green growth planning and implementation activities and facilitating collaboration amongst all stakeholders. Support line ministries with cross-sector coordination to support project design and implementation. <p>Technical Units</p> <ul style="list-style-type: none"> Multiple directorates working on cross-cutting green growth agendas (climate change, biodiversity and natural resources, and waste regulation) support line ministries with cross-sector coordination to support project design and implementation. <p>Policies Unit</p> <ul style="list-style-type: none"> Support with resource mobilization and partnerships. <p>Higher Steering Committee for Green Economy (composed of Secretaries-General of each of the key line ministries)</p> <ul style="list-style-type: none"> Responsible for reviewing and approving a results report on a bi-annual basis, and for submitting this to the Prime Ministry. <p>Green Growth Technical Committee (composed of technical level focal points)</p> <ul style="list-style-type: none"> Responsible for supporting action plan preparation and for reviewing and addressing implementation gaps and challenges on an ad hoc basis.

Stakeholder	Roles and Responsibilities
Ministry of Planning and International Cooperation (MOPIC)	<p>Evaluation and Institutional Development Unit</p> <ul style="list-style-type: none"> ▪ Reporting against the Jordan Vision 2025 and annual Executive Development Programs, economic growth and investment planning, and sustainable development planning. ▪ Ensure mainstreaming of green growth into the next national development plan (post-2025) and other cross-cutting national plans (Jordan Response Plan, Jordan Economic Growth Plan, etc.). <p>Directorate for International Cooperation</p> <ul style="list-style-type: none"> ▪ Coordinate with donors to link national priorities (projects and programs) with development assistance (grants, loans, public-private partnerships, etc.). <p>Department of Statistics (DOS)</p> <ul style="list-style-type: none"> ▪ Collect data to report against KPIs. <p>Higher National Committee for Sustainable Development</p> <ul style="list-style-type: none"> ▪ Provide guidance and follows up on all decisions, priorities and recommendations related to the 2030 Agenda.
Prime Ministry	<p>Public-Private Partnerships Unit</p> <ul style="list-style-type: none"> ▪ Determine which actions (or which components) are suitable and priority for developing public-private partnerships. Special emphasis is given to those investments that require strong government oversight, or where ability to generate revenues is weak in the initial payback period. ▪ Review and approve of implementation progress reports. <p>Progress Unit</p> <ul style="list-style-type: none"> ▪ Review and approve of progress reports against the Executive Development Plan and other national and sector-level plans, strategies, and projects.
Ministry of Finance (MoF)	<ul style="list-style-type: none"> ▪ Determine what level of contribution the government can make to action implementation at the sector level.
Jordan Investment Commission	<ul style="list-style-type: none"> ▪ Coordinate with the line ministries to develop relevant actions into investment proposals and promote the projects to potential foreign investors. ▪ Facilitate foreign direct investment to achieve green growth implementation.
NGOs	<ul style="list-style-type: none"> ▪ Support future action formulation by providing local context and technical expertise as needed. ▪ May be responsible for implementing actions in coordination with government or private sector.
Private sector	<p>Private sector associations</p> <ul style="list-style-type: none"> ▪ Support the development of market assessments/analysis to formulate better business models or revenue models for investment actions. ▪ Participate in regular public-private dialogue to identify gaps in regulatory environment or other barriers to investment and suggest solutions. ▪ Investors ▪ Provide feedback on project proposals and potentially invest in actions by providing grants, loans, or equity finance.

Coordination. Weak coordination between stakeholders is a green growth implementation barrier affecting all sectors and threatening the sustainability of green growth interventions. This fact has been well-documented in the Jordan Vision 2025, the Jordan Economic Growth Plan 2018-2022, the National Green Growth Plan, and through the consultation process for the development of this plan. To encourage greater future coordination and collaboration between sectors and institutions (public and private) all stakeholders must commit to developing a culture of knowledge exchange, innovation, sharing and collaboration. The government can play a leading role on the establishment of this culture through:

- Consolidating governance bodies where overlap exists, removing duplicate committees or governance units for the same issues;
- Upholding the highest standards of transparency and knowledge exchange, committing to sharing information as needed and following standard procedure for policy and project development;
- Hosting regular, inclusive sector-level donor and development partner consultations, and more frequent public-private-civil society dialogues on key policies and investments;
- Conducting more public outreach and awareness of government successes and lessons learned.

Financing Implementation. An estimated budget for implementation of each action is included in each action description in Chapter 5. This estimate is considered a starting point for detailed action planning. In some cases, implementation can be achieved at a lower cost, while others can be bundled with other programs/initiatives. The specific components of these programs and projects will likely differ during implementation. Line ministries implementing sectoral action plans are responsible for identifying the financial resources required for green growth action implementation, including using public budget where available and with sector donors. As implementation facilitators, MoEnv and MOPIC will support identification of off-budget resources for implementation to support SDG achievement and NDC implementation.

Official development assistance and climate finance are two sources of international finance that can

be applied to green growth implementation. While technical assistance programs and demonstration/pilot projects may be easily financed by donors on a grant basis, investment in projects is a more resource intensive process. Infrastructure projects typically require substantial up-front costs, which tend to be financed with debt under long payback periods. Consequently, most of these investments will be owned either by the government or large institutional investors (or a mixture of ownership through PPP). These will require cost-benefit-analysis and investment planning in advance of implementation. Project implementers will work directly with the Ministry of Finance to ensure that the necessary investment conditions can be reached.

Capacity building and Institutional Development.

The mainstreaming of green growth planning and implementation at the sector level will require continuous learning through capacity building and institutional development. The green growth analysis, objectives, implementation actions and results framework can be strategically mainstreamed at the sector level during sectoral planning exercises. Continuous development of the concept and its ramifications on sectoral development is needed for technical- and management-level government staff. MoEnv will aim to play an increasing role in supporting capacity building and institutional development with its partner ministries in the area of green growth and climate change.

Monitoring and Evaluation. Several donor-funded actions are included in the action plan, each with specific logic models and corresponding performance indicators as part of standard donor requirements. These will refer to and align with the overall results framework for the GG-NAP. Whenever possible, common indicators will be used to increase alignment and reporting schedules will be synchronized with the government of Jordan's fiscal year. Ongoing monitoring of the performance of individual sector actions will be the responsibility of the line ministry for the sector, as below, in coordination with the identified action "owner". Sector leads and the appropriate Action Leads will communicate any issues uncovered as part of their ongoing performance monitoring with MoEnv's Green Economy Unit.

Implementation Tracking. Implementation will be tracked jointly by the Green Economy Unit at the MoEnv, the relevant monitoring focal point at the sector ministerial level, and the Evaluation and Institutional Development Unit at the Ministry of Planning and International Cooperation (MOPIC). Key roles and responsibilities of all stakeholders responsible for pushing implementation are outlined below. Efforts will be taken within the first year to ensure sector-level commitment to implementation. MOPIC and MoEnv will work with action leads to

ensure sufficient access to financial and technical assistance for implementation.

Communications. MoEnv will work to ensure effective communication across government institutions about the status of implementation of the GG-NAP. Projects that contribute to green growth will be entered into the Green Growth Tracking System developed by MoEnv, and the Ministry commits to ensuring regular updates on implementation.

4.2 | Future Planning and the next phase (post-2025)

Sectoral Planning. Sector decision makers at the relevant line ministry and the MoEnv will seek to continuously support green growth mainstreaming at the sector level. This means using the objectives outlined in the action plan to guide implementation of sectoral policies and investments. Further, MoEnv will work with MOPIC to continuously seek to find and feature green growth actions under implementation in Jordan. Many existing or future actions that do not appear in the GG-NAP can still be considered green growth actions, and their impacts will be accounted for in green growth reporting. Lessons learned from these projects and programs will be compiled and reflected into the design of future projects and programs

Phase II Green Growth Action Planning. Action planning in the next phase will be less complex given the

experience of developing this first action plan. The preparations for this shall begin in the fourth quarter of 2024, with ample time for consultation and review of lessons learned in Phase I. The implementation period for Phase II is expected to be 2026-2030, and, as such, will be closely aligned to the Sustainable Development (2030) Agenda and the NDC. Green growth action planning for Phase II can also be aligned with the next long-term national development plan developed by MOPIC, the follow-up to the Jordan Vision 2025. For this process, MoEnv and MOPIC will work together to undertake consultations at the sector level, provide capacity building and strategic visioning workshops, and support green growth action ideation and formulation. Advance consultation with donors to the extent possible, and identification of public budget for green growth implementation, is needed.



5. Transport Sector Green Growth Actions 2021-2025

The following 13 priority actions have been identified for implementation in the 2021-2025 period. These interventions are estimated to cost USD167,000,000, and include:

- **7 investment preparation and demonstration actions.** These projects are at various levels of readiness: some require feasibility analysis, while others are investment-ready. Many are suitable candidates for public-private partnerships or direct private sector investment, and others are opportunities to leverage climate finance.
- **6 enabling policy and institutional reform actions.** Given current gaps in available fiscal resources, these actions intend to attract investment by addressing policy barriers and capacity gaps that lead to higher costs, risk levels or uncertainty in decision making. These include programs to support innovation, institutional reform, and coordination.

Implementation of these actions will contribute to the Transport Sector Green Growth Sub-Objective and the following:

- Increasing access to public transport services (and reduce reliance on individual car ownership) through an increase in private and public funding;
- Increasing public-private dialogue and collaboration in key transport sub-sectors, including tourism and logistics;
- Enhancing the enabling environment for Jordan's transition toward electric mobility;
- Contributing to a reduction of transport-sector GHG emissions and support the implementation of Jordan's NDC.

Table 7 shows the transport sector's green growth actions and can be used by action owners to begin project proposal formulation for the purpose of mobilizing public budget or external grants, loans or other financial support for implementation. It is understood that detailed implementation approach, outputs, timeline, budget, and stakeholders may change depending on the source of finance during the process of implementation.

TABLE 7
 Transport Sector Green Growth Actions 2021-2025

#	Action Title	Page #	Total Estimated Implementation Cost (USD)	Relevant Green Growth Objectives				
				Enhanced Natural Capital	Sustainable Economic Growth	Social Development and Poverty Reduction	Resource Efficiency	Climate change Mitigation and Adaptation
TR01	Develop and/or update Transport and Mobility Action Plans and Capital Investment Plans for the secondary metropolitan areas of Mafraq, Zarqa, and Irbid	25	5,000,000		x	x		x
TR02	Approve and Activate the National Public Transport Fund and identify mechanisms to raise capital for public transport infrastructure	27	51,000,000		x	x		x
TR03	Implement transport sector governance enhancement program and reform agenda to increase the effectiveness and efficiency of the transport sector policymaking process	29	1,000,000		x	x		x
TR04	Scale up the provision of public-school bus services in all municipalities (Scale-up Smart Move Project)	31	15,000,000	x	x	x		
TR05	Implement a pedestrian green infrastructure enhancement program in local commercial areas and near public transport	33	55,000,000	x		x		x
TR06	Develop a public-private dialogue and roadmap for improving road transport services linked to the tourism sector	35	1,000,000		x			x
TR07	Support the deployment of Intelligent Transportation Systems (ITS) to allow a modal and fare integration of the public and private transport systems in the city of Amman	37	9,870,000	x	x			x
TR08	Establish a national center of excellence and capacity building program for sustainable transport	39	1,000,000		x			x
TR09	Develop a joint public-private strategy and roadmap to improve the environmental sustainability of the logistics sector	41	1,000,000		x			x
TR10	Develop and implement a public-private partnership for improved parking management in Amman	43	11,000,000		x	x	x	x
TR11	Develop a national electric mobility strategy and action plan	45	1,000,000	x			x	x
TR12	Design and implement a public transport electric mobility pilot and capacity building program in Amman	47	5,000,000	x			x	x
TR13	Establish low-carbon municipal bus fleets for Irbid, Zarqa and Madaba municipalities	49	22,000,000		x	x		x

TRO1 | Develop and/or update Transport and Mobility Action Plans and Capital Investment Plans (CIPs) for the secondary metropolitan areas of Mafraq, Zarqa, and Irbid

Description
<p>The population of Jordan has grown substantially since 2012 as a result of the Syrian refugee crisis. Estimates suggest that up to 1.265 million refugees have entered the country as either documented or undocumented refugees.⁵⁴ In 2012, Jordan’s population was roughly 7.4 million, but today it stands at just over 10.1 million. This massive increase in population has put additional pressure on municipal governments to provide access to basic services, including public transport services. Governments and development partners have created local economic development plans for some of the most affected cities, including Zarqa, Irbid and Mafraq.⁵⁵ These strategies address the need for transportation and logistics services in their respective geographical areas and underscore the importance of transport in economic development. At the same time, the MoT’s LNTS intends to implement a system of intercity or inter-governorate buses (“premium”, “core”, and “other”), as well as intra-governorate public transport services. MoT has also worked to develop a bus system restructuring plan to address some of these priorities. Thus far, demand studies have been conducted, which will be used to define updated routes and drive investment preparation for the necessary infrastructure and rolling stock. However, as municipal populations continue to grow, and as municipalities and governorates are given increasing responsibilities as a result of the 2015 Decentralization Law, sub-national governments will need to substantially increase their capacities for transport planning and implementation. Additional support is needed to build the capacity of municipal authorities, and to ensure that future transport investments and policies respond to the national green growth priorities.</p> <p>This action aims to increase alignment between national, regional, and municipal transport development visions, and to mainstream the concepts of inclusive green growth and sustainability into municipal transport policies and investments. Through this program, transport planners and decision makers from each municipality will undergo technical, strategic planning, and transport investment capacity building. Then, these municipalities will work with a development partner and MoT to develop TMMPs and CIPs for their municipalities. The CIPs will identify opportunities for the private sector to accelerate investment and identify financial mechanisms for required infrastructure and will define public sector investments and policies needed to achieve green growth through sustainable transport at the local level. The TMMPs will also include implementation roadmaps, clarifying roles and responsibilities for implementation between the municipal, governorate and central government institutions. As GAM is currently updating its Transport and Mobility Master Plan, GAM’s experience and lessons learned will be incorporated into the learning.</p>

Action Objectives	<ul style="list-style-type: none"> ▪ Ensure that major secondary cities in Jordan have policy and investment plans for public transport and mobility that mainstream green growth and are aligned with the LNTS. ▪ Achieve a better understanding of the capacities, strengths and weaknesses of municipal transport planning and implementation authorities to identify priority areas where efforts and resources are most needed. ▪ Mainstream inclusive green growth into the implementation of secondary city transport systems, emphasizing the need for multi-modal public transport to provide access to economic opportunity for Jordanians and non-Jordanians outside of Amman, and to reduce fuel consumption and associated GHG emissions.
Implementation Milestones	<ul style="list-style-type: none"> ▪ Three updated regional transport strategies and implementation plans for the areas surrounding the three main secondary cities in Jordan. Each will include: <ul style="list-style-type: none"> ▪ A baseline and gap assessment, stakeholder mapping and strategy linked explicitly to the LNTS and the Transport Sector GG-NAP, as well as their local economic development plans or strategies. ▪ Mapping of existing, proposed, and potential major economic investments, social hubs and city growth plans which are to be considered in the development of the strategies.

⁵⁴ Wana Institute/Mercy Corps. “The Syrian Refugee Crisis and Its Impact on the Jordanian Labour Market”, 2019.

⁵⁵ The World Bank. “Developing an Energy Efficient Urban Transport Plan for Zarqa City Downtown Area.” Vol. 1, 2011; ILO. “Local Economic Development Strategy For Mafraq Governorate 2016 – 2018,” 2016.; ILO. “Local Economic Development Strategy For Irbid Governorate 2016 – 2018,” 2016.

Implementation Milestones	<ul style="list-style-type: none"> ▪ A comprehensive implementation framework, with actions, results, and implementation arrangements (roles and responsibilities) clearly defined. ▪ A financing strategy to ensure that an adequate level of capital is available to fund the proposed regional transport sector actions. ▪ Design and implementation of one capacity building program targeted at improving the transport planning capacity of municipal authorities (including LTRC and based in municipalities).
Relevant Green Growth Objectives	<ul style="list-style-type: none"> ▪ Sustainable Economic Growth – Improve connectivity and accessibility between governorates and key growth areas. ▪ Social Development and Poverty Reduction - Increase access to reliable, affordable, and safe public transport services for all, including women, youth, and rural communities.

Estimated Implementation Period	
<i>Start Year</i> – 2021	<i>End Year</i> – 2023

Location(s)	Mafraq, Zarqa, and Irbid	Other key partners	Decentralization Committees in the targeted areas.
Implementing Stakeholders	<p>Lead Ministry of Local Administration, MoT, Land Transport Regulatory Commission, Zarqa Municipality, Irbid Municipality, Mafraq Municipality</p> <p>Support Ministry of Public Works and Housing, Ministry of Industry and Trade, Ministry of Energy and Municipal Resources, Investment Commission, GAM</p>	Estimated Budget for this Action	USD 5,000,000

Financing Secured	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Potential Source of Funding	European Bank for Reconstruction and Development (EBRD), French Development Agency (AFD), Global Environment Facility (GEF) and others to be determined (TBD),
Action leads to investment	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> This action is an Investment opportunity	Estimated Investment Size	n/a

Level of Priority			Readiness for Implementation				
Very High	High	Medium	1	2	3	4	5
<ul style="list-style-type: none"> ▪ Some municipal development plans or regional development plans have been developed. ▪ Relevant analysis is being conducted under the JBRIMP program (EBRD). 							

Implementation Risk Mitigation Measures	<ul style="list-style-type: none"> ▪ Procurement of a technical company with local expertise in the sector is required to properly generate primary data for the updated analysis. ▪ A stakeholder coordination committee should be established between national and regional level government authorities to support joint decision making and improve local capacities to plan and implement sustainable transport projects. ▪ Refugee host community's municipal should seek to leverage support from the humanitarian sector for this activity where possible.
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TRO2 | Approve and Activate the National Public Transport Fund and identify mechanisms to raise capital for public transport infrastructure

Description
<p>One of the main barriers to the development of public transport infrastructure in Jordan is the lack of financial resources for infrastructure development. This is in part due to high levels of public debt (at over 95% as of 2019), as well as a traditional reliance on the private sector to provide public transport services (making the necessary investments as they see fit). However, population growth in urban areas is causing substantial pressure on Jordan's piecemeal transport sector, which presents new challenges to economic growth and quality of life for urban dwellers across the country. Multiple local studies and experts have noted the need for the government to subsidize public transport, which will require far more capital investment than Jordan's private sector can handle on its own.⁵⁶ The Jordan Economic Growth Plan 2018-2022 estimated that transport sector investments of USD334 million could catalyze the desired level of sectoral growth⁵⁷. In response, Parliament passed the Passenger Transport Law in 2017, which recognizes the importance of public transport subsidies, and called for the establishment of the Land Transport Fund to institutionalize and fund the subsidies, and to grow a base of capital from which government could invest in infrastructure. As of 2019, this Fund has not been activated, and one of the key sources of revenue for the fund, a levy on gasoline and diesel, has yet to be implemented. Not all stakeholders are prepared to activate the fund in the current fiscal environment, and more evidence is needed to ensure that the impacts of transport sector policy and investment are well understood.</p> <p>This action aims to examine in detail the various feasibility options, size of investment needs and business model to activate the National Public Transport Fund. The project will determine the full financial gap for implementation of the LNTS, the options available to increase investment in the sector (for both infrastructure and better service provision), and the sustainable development impacts of prioritizing transport investment. Policy recommendations will be provided based on these studies, with measures provided that can be implemented alongside public transport subsidies to strengthen their impact on the sector. This could include the establishment of innovative contractual agreements with bus operators, the use of data and technology to increase efficiency, etc. Finally, this project will propose a mechanism to ensure the effective and efficient utilization of the funds.</p>

Action Objectives	<ul style="list-style-type: none"> Develop the evidence base necessary for improved transport sector investment decision-making. Identify all the possible options for increasing the availability of finance and future investments for the public transport sector and evaluate the cost-benefit of various options.
Implementation Milestones	<ul style="list-style-type: none"> One gap analysis report detailing the gap in finance, assessing the government's institutional capacity to deliver on the LNTS and evaluating the likelihood of the private sector being able to finance Jordan's transport development needs as per current government policy and practice. One options assessment of measures that could be taken to raise necessary capital, considering the role of concessional finance (such as climate finance), fiscal incentives, private sector investment, innovative business models, foreign investment, etc. A Cost-Benefit Analysis should be used to evaluate the different options. One detailed feasibility study and policy recommendations report to better understand the future role and objectives of the National Land Transport Fund, and to provide guidance on the necessary policies, reforms and institutional setup needed to finance and implement transport projects. This study will also examine the way to maximize efficiency in all transport investments. Recommendations should be presented in the form of a road map. National consultation forum to discuss and review the outcomes of the action and to affirm stakeholders' input.
Relevant Green Growth Objectives	<ul style="list-style-type: none"> Sustainable Economic Growth - Increase public funding for public transport infrastructure and service provision. Social Development and Poverty Reduction - Increase access to reliable, affordable, and safe public transport services for all, including women, youth, and rural communities.

⁵⁶ Center for the Study of the Built Environment & the Friedrich Ebert Foundation. "Public Transportation in Jordan: A Policy Study Report," 2017.

⁵⁷ Government of Jordan. "Jordan Economic Growth Plan 2018-2022," 2018.

Estimated Implementation Period	
<i>Start Year</i> – 2021	<i>End Year</i> – 2023

Location(s)	National Level	Other key partners	Central Bank of Jordan, Cities and Villages Development Bank.
Implementing Stakeholders	<i>Lead</i> MoT, Land Transport Regulatory Commission. <i>Support</i> Ministry of Finance, Prime Ministry	Estimated Budget for this Action	USD 1,000,000

Financing Secured	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Potential Source of Funding	World Bank, EBRD, Islamic Development Bank, or a combination of development agencies matched with government funds.
Action leads to investment	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> This action is an Investment opportunity	Estimated Investment Size	50,000,000 (334,000,000 estimated transport sector investment need to 2022) – however, this depends on the feasibility and actual needs assessment.

Level of Priority			Readiness for Implementation				
Very High	High	Medium	1	2	3	4	5
<ul style="list-style-type: none"> The Passenger Transport Law was passed in 2017, but the establishment of the Land Transport Fund has been stalled. No analysis is currently available for this. 							

Implementation Risk Mitigation Measures	<ul style="list-style-type: none"> Data availability for conducting CBA may be a challenge, so additional preparation and funding may be needed to determine if preliminary data collection and analysis will be required. Stakeholder consultation will be required to uncover all possible options; strong collaboration with the Ministry of Finance and the Prime Ministry are required before this fund can be activated under current fiscal conditions. Decision makers should contribute to the formulation of the research and analysis agenda to ensure their concerns are addressed and questions answered.
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TR03 | Implement transport sector governance enhancement program and reform agenda to increase the effectiveness and efficiency of the transport sector policymaking process

Description
<p>One of the major barriers to the implementation of Jordan's LNTS and enforcement of policies is a lack of strong institutional coordination mechanisms and the existing overlapping mandates between central and sub-national institutions (ministries, municipalities, and governorates). The institutional set-up of Jordan's transport sector is complex and involves multiple players.⁵⁸ At a strategic development level, national decision makers from the MoT, Ministry of Local Administration, Ministry of Industry, Trade and Supply, Ministry of Labor, the Public Security Directorate, MoEnv, Ministry of Public Works and Housing and the MEMR all have important roles to play. At an implementation level, multiple regulatory commissions and enforcement bodies for different geographical jurisdictions exist i.e. the Central Traffic Department, Land Transport Regulatory Commission, GAM, and other municipal governments. The MOPIC Jordan Investment Commission, and the Ministry of Finance are responsible for ensuring an adequate level of funding is available for implementation from public, private and donor sources. Finally, collaboration between private sector bodies (e.g. private bus operators and syndication associations) is needed, and between public and private sector stakeholders, as government relies highly on private sector investment.</p> <p>Each institution plays a role in ensuring access to safe, affordable, and reliable transport services in Jordan's municipalities.⁵⁹ However, as a result of this complex environment, these institutions often compete for influence and resources, and rarely conduct joint planning or policy development, which is impeding the sector's ability to perform. Consequently, even if the sector receives the necessary financial support for sectoral transformation, it will be difficult to achieve the sustainable sectoral development critical to Jordan's overall economic growth. The LNTS recognizes this issue and signals at priority activities to eliminate overlapping responsibilities, improve the communication within the sector and foster integrated planning.</p> <p>The purpose of this action is to build the capacity of key transport sector decision makers to 1) identify the strengths and weaknesses of the current institutional setup for public transport service provision and its impacts on green growth implementation; 2) reduce the complexity in governing public transport service provision by making critical sectoral reforms; 3) increase public-private-civil society dialogue on public transport challenges through capacity building and knowledge exchange.</p>

Action Objectives	<ul style="list-style-type: none"> ▪ Identify gaps and needs for enhancing transport sector institutions and decision-making processes in order to achieve the objectives in the LNTS. ▪ Increase the efficiency and effectiveness of the transport sector policymaking and implementation process by mainstreaming cooperation between relevant transport sector governmental bodies and reducing the level of overlapping responsibilities.
Implementation Milestones	<ul style="list-style-type: none"> ▪ Baseline and Gaps Identification <ul style="list-style-type: none"> ▪ Stakeholders mapping, and stakeholder engagement plan. ▪ One institutional assessment report to identify areas of disconnect, overlap of roles and responsibilities, and gaps in enforcement within the transport sector at the ministry, governorate, municipality, private sector, and civil society levels. To achieve this milestone, a comprehensive legal and institutional review is required to cover all related laws and regulations, institutional frameworks, operation procedures and forms, etc. ▪ One set of policy recommendations to improve coordination and transparency between and within transport government bodies. ▪ Policy and Institutional Reforms <ul style="list-style-type: none"> ▪ Based on the findings of the assessment, convene key stakeholders through an inter-ministerial coordination body (preferably through an existing committee). ▪ Build capacity of stakeholders to better understand the extend of Jordan's governance challenges and exchange knowledge on how to address these challenges, based on international best practice and lessons learned from the Jordan context. ▪ Develop a roadmap of institutional, legal, regulatory and policy reform measures to achieve the intended reform objectives.

⁵⁸ Jordan Long-term National Transport Strategy and Action plan.

⁵⁹ Center for the Study of the Built Environment & the Friedrich Ebert Foundation, "Public Transportation in Jordan: A Policy Study Report," 2017.

Relevant Green Growth Objectives	<ul style="list-style-type: none"> ▪ Sustainable Economic Growth – Increase access to reliable, affordable, and safe public transport services in urban areas; Increase public funding for public transport infrastructure and service provision. ▪ Social Development and Poverty Reduction - Increase access to reliable, affordable, and safe public transport services for all, including women, youth, and rural communities.
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Estimated Implementation Period	
<i>Start Year</i> – 2021	<i>End Year</i> – 2024

Location(s)	National Level	Other key partners	-
Implementing Stakeholders	<p><i>Lead</i> MoT</p> <p><i>Support</i> Ministry of Local Administration, GAM, Municipal Governments, Ministry of Public Works and Housing, Ministry of Industry, Trade and Supply, MEMR, Ministry of Labor, MoEnv, MOPIC, Private sector transport providers, Aqaba Special Economic Zone Authority, Petra Development and Tourism Region Authority</p>	Estimated Budget for this Action	USD 1,000,000

Financing Secured	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Potential Source of Funding	-
Action leads to investment	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> This action is an Investment opportunity	Estimated Investment Size	-

Level of Priority			Readiness for Implementation				
Very High	High	Medium	1	2	3	4	5

Implementation Risk Mitigation Measures	<ul style="list-style-type: none"> ▪ Commitment to transparency and accountability are critical to ensure that public-private dialogue is productive – this can be formalized through a joint declaration at the beginning of the project. ▪ This action is linked to TM2 and both actions are highly recommended to be implemented parallelly.
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TR04 | Scale up the provision of public-school bus services in all municipalities (Scale-up Smart Move Project)

Description
<p>Public-school students in Jordan do not have guaranteed access to affordable and safe transport to their schools. This means that students who do not live within walking distance of their school must either rely on a neighbor or family member, pay for a taxi (or ride-hailing service), or pay for a private bus. On the other hand, students in private schools tend to have access to safer and affordable transport options, leaving public school students at a further disadvantage. As a result, the government aims to ensure the provision of transport options to all public-school students. According to the LNTS, school trips represent 35% of total trips per day in Jordan, with only 13% of the trips performed by school buses. School bus trips account only for 10% of total daily public transport, and only 12-15% of the total school trips are performed by school bus. The vast majority of students walk (51%) or are driven by their parents using private vehicles (21%)⁶⁰. Overcrowded school buses and unsafe traffic conditions increasingly threatening children's safety⁶¹. These issues are even more prevalent in poorer areas of GAM, which are least served by public transport options.</p> <p>The "Smart Move" project, led by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ's) Qudra initiative and operationalized by Careem bus as well as other private sector transport companies was initiated in 2018 in collaboration with the Ministry of Education, the MoT and the Prime Ministry⁶². Its pre-pilot was launched in 2018 and provides transport services in areas of Amman Governorate and in the University of Jordan, Naour, Marj Al-Hamam and Bayader Wadi Al-Seer. The MoT is responsible for monitoring the performance of the service providers to ensure the best interests of the students. This project is also being tested in Zarqa governorate to serve the region of Batrawi, and the Tabarbour area. In April 2019, the LTRC established regulations and instructions, opening the door for licensing of school transport service providers.</p> <p>This action aims to scale up the provision of services to additional areas and create a sustainable implementation framework for public school transport service provision in Jordan, leveraging the lessons learned from the pilot project. Providing public school transport can have environmental, social, and economic benefits. First, it can reduce traffic congestion during peak hours around school areas which can increase overall economic productivity and reduce air pollution and GHG emissions from privately-owned vehicles. Second, it can increase the safety conditions for students, and minimize the number of students who have to walk long distances to and from school. Finally, it can provide critical access to education opportunities for low-income families, helping to reduce poverty and promote social equity.</p>

Action Objectives	<ul style="list-style-type: none"> ▪ Reduce traffic congestion during peak hours around school areas, increasing overall economic productivity. ▪ Reduce air pollution and GHG emissions privately-owned vehicles. ▪ Increase safety conditions for students who use public school transport services. ▪ Reduce the number of students walking long distances to and from school. ▪ Increase access to education opportunity for low-income families.
Implementation Milestones	<ul style="list-style-type: none"> ▪ Scale-up Roadmap. Convene relevant stakeholders (government, private sector, and civil society) to develop a detailed implementation roadmap for the scale up of public-school transport services, building on the positive outcomes from the service model used for the GIZ-Qudra pilot in GAM. This should include the technical, policy and investment measures required to achieve the desired level of services. ▪ Conduct Feasibility Analysis. Undertake the necessary investment feasibility analysis and market assessments to determine the best conditions and locations for the next phase of scaling up the pilot project. This feasibility assessment should also include: <ul style="list-style-type: none"> ▪ Baseline and demand forecasting, including a willingness to pay study. ▪ Current market supply conditions (formal and informal sectors). ▪ Socio-economic impacts from the proposed business model on current service providers (formal and informal). ▪ Economic and technical evaluation of the options for the enrollment of current informal service providers in the new service model. ▪ One pre-feasibility study and options assessment for establishing a revolving fund to support scale-up of the project in additional sites nationwide.

⁶⁰ Shbeeb, L, and J Mejahed. "A Study into Pedestrian Safety Problem in Jordan." In Safe Non-Motorised Traffic - Planning, Evaluation, Behavioural, Legal & Institutional Issues - Proceedings of Ictct (International Cooperation on Theories and Concepts in Traffic Safety) Extra Workshop. Vancouver, Canada, 2003.. (Link)

⁶¹ The Jordan Times. "Crowded School Buses, Possibility of Accidents a Concern for Parents." 2015.

⁶² Qudra. "Reaching a Milestone: Qudra Rehabilitates 26 Public Schools in Jordan," n.d.

Implementation Milestones	<ul style="list-style-type: none"> ▪ Implement Scale-up. Once this is determined, support implementation by: <ul style="list-style-type: none"> ▪ Undertaking necessary reforms in the regulatory framework (i.e. terms and conditions of public safety) to achieve successful implementation. ▪ Developing a system of standard routes based on the demand analysis. ▪ Facilitating the provision of licenses/permits by the MoT for selected service providers (based on criteria established in the implementation roadmap). ▪ Developing and open tenders for private sector service providers to enter the market. ▪ Developing institutional arrangements for implementation, including KPIs for monitoring and evaluation of the service, incorporating environmental, economic and social objectives. ▪ Developing and implementing comprehensive capacity building of the MoT staff and relevant staff from GAM and the traffic police responsible for licensing, monitoring, and evaluating the coverage and level of services. This includes training and mentoring, in addition to improving the physical capacity (information technology infrastructure) of the targeted institutions by developing in-house service monitoring programs using GPS-based vehicle tracking and fleet management solutions. ▪ Developing, implementing, and monitoring the results of a public awareness program targeting access to services, monitoring and reporting complains. This includes semi-annual evaluation of the provided services, number of beneficiaries, passenger's safety, driver's behavior, vehicle adequacy and condition, overall level of service, passengers' (students and their families) satisfaction with the level of service, etc. ▪ Developing and implementing investment opportunities to investors.
Relevant Green Growth Objectives	<ul style="list-style-type: none"> ▪ Social Development and Poverty Reduction – Increase access to reliable, affordable, and safe public transport services for all, including women, youth, and rural communities (a) ▪ Natural Capital - Reduce air pollutant emissions (PM_{2.5}, PM₁₀, NOx, and SOx) from road transport (a) ▪ Sustainable Economic Growth – Increase access to reliable, affordable, and safe public transport services in urban areas (c)

Estimated Implementation Period	
<i>Start Year</i> – 2021	<i>End Year</i> – 2024

Location(s)	Areas within Greater Amman which are poorly served by public school-busses and/or regular public transport; potentially secondary cities of Zarqa and Irbid.	Other key partners	Private Sector Bus operators, Jordan Development and Employment Fund.
Implementing Stakeholders	<p><i>Lead</i> MoT, Land Transport Regulatory Commission, Ministry of Education</p> <p><i>Support</i> GAM, Prime Ministry, other relevant municipalities, Ministry of Local Administration</p>	Estimated Budget for this Action	USD 5,000,000

Financing Secured	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Potential Source of Funding	GIZ-Qudra, private sector investment.
Action leads to investment	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> This action is an Investment opportunity	Estimated Investment Size	USD 10,000,000 (cumulative investments from private sector service providers)

Level of Priority			Readiness for Implementation				
Very High	High	Medium	1	2	3	4	5
<ul style="list-style-type: none"> ▪ Several regulatory and legal adjustments have been made for the purpose of implementing the Qudra pilot in 2019. ▪ Business model development and partnership formulation are currently underway. 							

Implementation Risk Mitigation Measures	<ul style="list-style-type: none"> ▪ A social and economic impact study is proposed to address anticipated impacts on the current formal and informal service providers.
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TR05 | Implement a pedestrian green infrastructure enhancement program in local commercial areas and near public transport

Description
<p>Adequate pedestrian infrastructure promotes walkability and allows convenient access to public transport services. This is a pre-condition for social and economic development because it facilitates access to economically productive activities. In Amman, although a considerable proportion of trips are undertaken on foot (26%), urban infrastructure is overall not pedestrian friendly. This is particularly true in low-income or disadvantaged areas of the city, which still have poor on-foot accessibility to public transport⁶³. At the same time, the GAM aims to rehabilitate and develop its major commercial zones to increase pedestrian traffic, and ensure access to basic commercial services such as supermarkets, banks, etc.</p> <p>The government has long recognized the importance of non-motorized transport, with both the Transport and Mobility Master Plan for Amman as well as the LNTS including several interventions to improve urban infrastructure to enhance walkability. The City of Amman envisages the creation of mixed-used corridors in key areas of the city, called “Local Commercial Zones”, which will be accessible to residents without the need for a vehicle. Other projects are currently being developed to enhance access to public transport stations, such as improved crosswalks or stairways near bus stops. Traditional approaches to building pedestrian infrastructure in Amman have not prioritized the condition of the natural environment, nor has its protection been prioritized, which often comes with unseen costs; for example, poorly planned roads and walkways can quickly flood during the rainy season, and tree planting on sidewalks can create safety and accessibility challenges. The practice of more inclusive urban planning has been piloted in Amman through the project “Improving Living Conditions in disadvantaged areas in Amman” (ILCA), led by GIZ in cooperation with GAM. The project promotes community ownership in decision making through a participatory approach, and citizens are actively involved in the design, planning and management processes of local infrastructure development, including that which serves to increase the accessibility to public transport and enhance walkability. At the same time, city managers are also developing an urban design guideline that would incorporate greater green space using a green infrastructure (GI) approach. GI incorporates the natural shape of the land, the flow of water, the quality of air and the general condition of the natural environment into its design – can have long-term economic and environmental benefits, increasing pedestrian health safety, and improving the city’s resilience and ensure a greater return on investment for construction efforts.⁶⁴</p> <p>This action leverages the successes and lessons learned from the GIZ-GAM urban GI pilot and applies them to the development of pedestrian infrastructure in a number of local commercial zones.</p>

Action Objectives	<ul style="list-style-type: none"> ▪ Improve walkability in Local Commercial Zones and around major social hubs. ▪ Increase the resilience of pedestrian infrastructure by incorporating green infrastructure into the design. ▪ Increase resilience of the urban infrastructure and enhance growth of the city’s green infrastructure. ▪ Facilitate support for the notion for increased ridership of public transportation by improving walkability and access to public transport stations.
Implementation Milestones	<ul style="list-style-type: none"> ▪ One baseline and feasibility study to select city locations where pedestrian flow enhancements and green infrastructure development can have the largest impact on walkability and infrastructure resilience with a least-cost intervention approach. This includes developing a socio-economic study, promoting public participation and a triangulation study. ▪ One options assessment for the design of pedestrian infrastructure, to be supported by surveys to assess the demand and must-use innovations to embed sustainable enhancements (i.e. maximizing water and energy efficiency, while reducing pollution and litter). This will focus on functionality, users’ needs, and sustainable solutions through close consultation with members of the selected community and local council representatives. ▪ One set of instructions for the development of green pedestrian infrastructure – this will be used to guide the construction of this project as well as future projects, in accordance with local legal practices and safety measures. A maintenance must also be put in place, in a manner that is fully coordinated with concerned entities.

⁶³ GAM. “Transport and Mobility Master Plan for Amman,” 2010.

⁶⁴ “Developing Strategies for Resilient and Livable Urban District Development.” In Connective Cities Project Workshop Developing, Amman, Jordan, 2018.

Implementation Milestones	<ul style="list-style-type: none"> ▪ One report that provides full documentation of the process, including the outcomes, the lessons learned, and recommend future enhancements to be implemented. This report will include a green infrastructure investment framework with cost-benefit analysis for specific sites. ▪ One set of capacity building modules and training courses for city planners in and outside of Amman on topics that relate to innovation in enhancing pedestrian flow and walkability, and the selection of green infrastructure interventions. ▪ Four pedestrian green infrastructure demonstration sites (projects) designed and implemented in east and south Amman.
Relevant Green Growth Objectives	<ul style="list-style-type: none"> ▪ Enhanced Natural Capital - Promote the use of green infrastructure in the transport sector infrastructure and investment planning. ▪ Social Development and Poverty Reduction - Enhance the safety and walkability of pedestrian walkways in urban areas. ▪ Climate Change Adaptation and Mitigation - Increase resilience of road transport infrastructure to withstand extreme weather events and ecological shocks.

Estimated Implementation Period	
<i>Start Year</i> – 2021	<i>End Year</i> – 2024

Location(s)	GAM	Other key partners	Development and donor agencies including GIZ, UNDP, Un Habitat, etc.
Implementing Stakeholders	<i>Lead</i> GAM, Local Municipalities <i>Support</i> Decentralization committees in implementation areas; Ministry of Local Administration, Ministry of Public Works and Housing.	Estimated Budget for this Action	USD 5,000,000

Financing Secured	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Potential Source of Funding	To be determined (TBD)
Action leads to investment	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> This action is an Investment opportunity	Estimated Investment Size	USD 50,000,000 (considering long term investment through green climate fund and other funding sources, in addition to PPP for the establishment of new public parks).

Level of Priority			Readiness for Implementation				
Very High	High	Medium	1	2	3	4	5
<ul style="list-style-type: none"> ▪ Several neighborhood pilots have been tested in Amman. ▪ GAM is conducting analysis related to green infrastructure which can be used to further elaborate an approach and investment plan. 							

Implementation Risk Mitigation Measures	<ul style="list-style-type: none"> ▪ This action should investigate opportunities to benefit from the climate green fund to enhance and grow green urban spaces all over Amman, and perhaps to implement the concept of productive urban landscape (especially in South Amman and along the right of way of the Hijaz railway and the main roads), in addition to multiplying the number and areas of green spaces (parks) all over Amman. This should be further investigated in the feasibility assessment milestone.
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TR06

Develop a public-private dialogue and roadmap for improving road transport services linked to the tourism sector

Description

Jordan's tourism sector contributes to roughly 10% of the country's GDP, employs 88,000 people, and in 2018 generated revenues for the government of over USD5 billion, making it one of the most important sectors for the economy.⁶⁵ In 2018, 860,000 overnight tourists visited Jordan's wide array of cultural, historical and religious sites, as well as for its growing eco-tourism, medical tourism, and experiential tourism services. The government of Jordan would like to continue to grow the tourism sector in a sustainable way (see the **Tourism Sector GG-NAP**), increasing the number of visitors, and the length of their stay in the country. However, despite the attractiveness of Jordan's touristic destinations, the lack of affordable, reliable, and safe transport services is a challenge. While the major tourism transport companies have improved the quality of their rolling stock in recent years, tourists still must rely on personal transport for access to touristic sites which is expensive compared to mass tourism transport. At the same time, recent national laws requiring improved access for disabled persons have not been fully reflected into the transport infrastructure in Jordan. As the number of tourists visiting Jordan grows, so too is the pressure they are placing on the country's transport infrastructure. Improvement in the safety, affordability, and reliability of tourism-focused road transport services could have a substantial impact on the strength of the tourism sector, improving Jordan's image abroad and attracting more tourists, while at the same time providing crucial intercity transport for people living in Jordan.

Road transport for tourism (a mix of intercity buses, tour buses, taxis, and private limousine services) is dominated by private sector companies. The government sets the standards for the operation of these services through regulations and enforcement but does not have the financial resources or mandate to provide this service itself. Still, the Ministry of Tourism and Antiquities does prioritize the provision of better services (better advertisement, availability of English language, etc.) as a matter of strategic importance for increasing the economic impact of the tourism sector. Studies indicate that the lack of competition in the tourism transport services sector is a root cause of low quality and quantity of service provision.⁶⁶

This action establishes an innovative policy dialogue mechanism whereby government and private sector can jointly plan and implement private sector-based sustainable transport projects that will simultaneously increase profits, raise government revenues, and increase access to sustainable transport services. The public-private dialogue approach is a useful tool for market development and can help both sectors clarify their intentions, and lead to stronger collaboration for the good of the economy. The dialogue will also present the opportunity to discuss the issue of mass transport for inter-city purposes, exploring the gaps and challenges to expanding affordable and safe intercity connectivity.

Action Objectives

- Increase the quality and quantity of public-private exchanges on the topic of transport in the context of Jordan's tourism sector and its implications on broader local and national economic development.
- Develop a pathway toward increased investment in sustainable transport services (mass transit, inter-city transport and low-carbon vehicles) in the tourism sector.

Implementation Milestones

- **One market assessment for tourism transport developed**, identifying the types of transport available, rates of use and status of private sector developed as well as the gaps in quality and quantity of service provision. This study should engage all related stakeholders and account for their input and aspirations.
- **Identification of the government's policies and regulations that limit competition and discourage investment** (domestic and foreign direct) in upgrades of environmentally and socially inclusive infrastructure, including access for disabled persons.
- **One report with short-to-medium-term policy and investment objectives** (with specific targets and clearly defined roles and responsibilities) with tourism and transport sector stakeholders, potential investors, and investment promotion authorities. This report should also identify lessons learned from tourism transport companies that can be applied to the expansion of domestic inter-city mass transport.

⁶⁵ The Jordan Times. "Tourism Revenues Surpass \$5-Billion Mark in 2018." 2018.

⁶⁶ EnConsult. "Tourism and Travel Related Services Sector: Tourism Sector - Trade In Services Benchmarking Study," n.d.

Implementation Milestones	<ul style="list-style-type: none"> ▪ One set of investment proposals (with business models) low-carbon tourism transport vehicles to be potentially submitted by private sector, and an analysis of potential financiers to support implementation.
Relevant Green Growth Objectives	<ul style="list-style-type: none"> ▪ Sustainable Economic Growth – Improve connectivity and accessibility between governorates and key growth areas; Increase access to reliable, affordable, and safe public transport services in urban areas.

Estimated Implementation Period	
<i>Start Year</i> – 2022	<i>End Year</i> – 2023

Location(s)	National	Other key partners	Petra Development and Tourism Region Authority, Aqaba Special Economic Zone Authority, GAM, MOPIC, Jordan Tourism Board, Royal Society for the Conservation of Nature.
Implementing Stakeholders	<p><i>Lead</i> Ministry of Tourism and Antiquities, MoT</p> <p><i>Support</i> Ministry of Finance, Private sector tourism transport service providers Jordan Investment Commission</p>	Estimated Budget for this Action	USD 1,000,000

Financing Secured	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Potential Source of Funding	To be determined (TBD)
Action leads to investment	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No – No direct investments are connected to this action, but identification of needs and gaps may help decision makers better understand how to prioritize and attract transport sector investment needs. <input type="checkbox"/> This action is an Investment opportunity	Estimated Investment Size	n/a

Level of Priority			Readiness for Implementation				
Very High	High	Medium	1	2	3	4	5

Implementation Risk Mitigation Measures	<ul style="list-style-type: none"> ▪ Part of the effort for this project will be establishing a productive public-private dialogue, so a clear assessment of gaps is needed ahead of the dialogue. ▪ A fair and transparent process for identifying stakeholders and engaging the private sector according to Jordanian law and best practices should be developed; the project should work with the government to articulate the “rules of engagement” with the private sector, and set clear expectations for the structured dialogue.
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TR07 | Support the deployment of Intelligent Transportation Systems (ITS) to allow a modal and fare integration of the public and private transport systems in the city of Amman

Description
<p>The MoT has an ultimate objective of catalyzing a modal shift away from private vehicle-based transport towards public transport use. To do this, the government aims to address three main dimensions: affordability, safety, and reliability. Regarding affordability, one of the greatest challenges is improving the system without substantially raising the cost for consumers. In the 2017-18 period, the average annual household transportation expenditure in Amman was JOD 2,301.50, equivalent to 18% of the average household income⁶⁷. Reliability is another challenge. The average waiting time of passengers for public transport is slightly below the acceptable international standards (at 12 to 23 min. vs a recommended 10 to 20 min)⁶⁸; the fact that service providers tend to not follow schedules or planned routes causes the service to be unreliable.</p> <p>Amman’s Transport and Mobility Master Plan has Urban Traffic Control (UTC) and Intelligent Transport Systems (ITS) strategies to address these challenges. The city has recently procured ITS services, which are ready to implement. At the same time, the MoT is overseeing an ITS pilot in the city of Jerash and is considering further expansion in other municipalities. ITS provides a platform through which both the government and service providers can more easily collect transport sector data. The ITS also provides new opportunities to improve affordability of public transport service, including providing users fare integration through smart cards or e-payment and smoother modal integration between different public transport modes. ITS also enables the government to subsidize transport more efficiently and effectively.</p> <p>The forthcoming Amman Green City Action Plan notes that the transport network’s capacity is currently low and should be further developed before expanding the ITS. Therefore, with Amman’s ambitions to be a smart and low-carbon city, efforts should be taken in advance to understand and plan for ITS implementation. This action proposes capacity building for municipal public transport authorities on the range of opportunities associated with ITS implementation. Implementation of this action will also lead to the design of an action plan for a unified, multi-user ITS for the city of Amman which could incorporate the existing Advanced Traffic Management System (ATMS) and Advanced Public Transportation System. Because ITS systems are new to Jordan, substantial capacity building of public and private sector authorities is required if their impact is going to be realized. Further, even though the Greater Amman Municipality (GAM) is the first body to implement an ITS, government authorities aim to expand ITS across multiple municipalities. Municipal transport authorities outside of GAM will be included in the learning and development to ensure smooth development outside of Amman.</p>

Action Objectives	<ul style="list-style-type: none"> ▪ Increase the capacity of municipal transport authorities to maximize the benefits of ITS. ▪ Prepare the City of Amman, MoT, and other municipal transport authorities for strategic ITS development. ▪ Increased ease of payment and ability to subsidize transport sector activities. ▪ Increases attractiveness of investment in the transport sector, eventually increasing ridership on public transport. ▪ Take key steps to increase integration of payment, data collection and transport planning between public transport sector modes inside and outside of Amman.
Implementation Milestones	<ul style="list-style-type: none"> ▪ Capacity building program developed constituting training to reflect international best practice and standards around the following topics: <ul style="list-style-type: none"> ▪ Amman System design and configuration – tailoring the system to identified stakeholder’s needs and transport challenges (such as use of schedules, information and communications technology, pricing, etc.). ▪ Financial analysis for the system installation and maintenance – this covers the calculation of installation & maintenance costs of all software, devices, equipment, personnel, etc. of the system components, whether on the street or in relevant organizations. ▪ Analysis for system testing – all components of the system, whether physical or virtual, must go through testing. The testing should identify failures, risks, deficiencies and threats and the possible responses to each, whether encountered or projected.

⁶⁶ Department of Statistics. "Household Expenditures & Income Survey 2017." 2017.

⁶⁷ Al-Masaied, Hashem R, and Amir Shtayyat. "Performance of Urban Transit in Jordan." Journal of Engineering Research and Applications 6, no. 83 (2016): 7–12.

Implementation Milestones	<ul style="list-style-type: none"> ▪ Assessment of the capacity, constraints, and gaps for ITS implementation in Amman, including: <ul style="list-style-type: none"> ▪ Identification of the various key stakeholders, their roles, responsibilities, challenges, and needs. ▪ Comprehensive context analysis to determine the challenges, opportunities, and objectives of the ITS. ▪ All users should be able to access up-to-date data at any point. The system must be well integrated and should provide a view-only public online-platform to enable enriched experience for people from all different segments. ▪ Amman's ITS roadmap developed with the participation of all related stakeholders.
Relevant Green Growth Objectives	<ul style="list-style-type: none"> ▪ Social Development and Poverty Reduction - Increase access to reliable, affordable, and safe public transport services for all, including women, youth, and rural communities. ▪ Climate Change Adaptation and Mitigation - Reduce GHG emissions from the transport system by using low-carbon transport technology and through policies under the Avoid-Shift-Improve framework. ▪ Enhanced Natural Capital - Reduce air pollutant emissions (PM_{2.5}, PM₁₀, NOx, and SOx) from road transport.

Estimated Implementation Period	
<i>Start Year</i> – 2020	<i>End Year</i> – 2023

Location(s)	GAM	Other key partners	Municipal governments (transport authorities) and transaction advisors for ITS tender
Implementing Stakeholders	<i>Lead</i> GAM, MoT/ Land Transport Regulatory Commission <i>Support</i> Ministry of Digital Economy and Entrepreneurship, MoT, Municipalities	Estimated Budget for this Action	Ongoing, seeking investment

Financing Secured	<input type="checkbox"/> Yes – Government funds are allocated for this <input checked="" type="checkbox"/> No	Potential Source of Funding	Government/private sector mix
Action leads to investment	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> This action is an Investment opportunity	Estimated Investment Size	JOD7,000,000 (USD 9,870,000)

Level of Priority			Readiness for Implementation				
Very High	High	Medium	1	2	3	4	5
<ul style="list-style-type: none"> ▪ Tender documents for GAM and Jerash ITS have been issued and investments are pending. 							

Implementation Risk Mitigation Measures	<ul style="list-style-type: none"> ▪ When identifying ITS actions, the level of locally available technology and personnel capacity will be considered. And in the absence of cutting-edge technology, appropriate technology will be employed instead, to reduce potential technology risk. ▪ The implementation of an ITS system requires extensive investment from the government. Thus, various financial models involving a public-private sector partnership will be explored.
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TR08 | Establish a national center of excellence and capacity building program for sustainable transport

Description	
<p>The Government of Jordan recognizes the importance of developing a sustainable transport sector, with specific mention of an “environmental scenario” in the LNTS, and expressions of interest in various green transport interventions. As a result of this initial interest from both the government and citizens, there has been a steep increase in the uptake of hybrid and EVs (due in large part to customs exemptions for purchase of these greener technologies), and the decision to implement a bus rapid-transit (BRT) system to encourage people to shift from private to public transport. As the government becomes increasingly more responsible for ensuring access to sustainable transport services, technical capacity, innovation in policy and better tools for investment decision-making will be needed. All national stakeholders must be aware of the latest global market trends in transport technology, have a holistic understanding of the role of transport in economic development and mitigating against climate change, and be familiar with international best practice on the topic of low-carbon, sustainable transport service provision. Each segment of society could benefit from increased knowledge in this regard:</p> <p>Government – technical capacity to better define and prioritize transport infrastructure investments, opportunities for integration with national energy systems, methodologies to assess the sustainability of projects and conduct cost-benefit analysis, stronger understanding of financing arrangements, including PPPs and the role of subsidization.</p> <p>Private sector – access to information about more energy efficient transport technologies (which can reduce total cost of ownership), value-chain analysis for major transport and logistics sector to identify cost savings and market development opportunities by making the sector more sustainable, opportunities to innovate and provide better transport services, especially for women and those with disabilities.</p> <p>Civil society – knowledge sharing to identify international best practice around sustainable transport, access to data and conceptual understanding in order to contribute to better decision making, ability to translate lessons learned and identify technical needs into the education system.</p> <p>While policies and investments in sustainable transport are becoming increasingly common around the world, the concept is still relatively new to the leading national transport authority, the MoT. As the leading sector institution, it is critical that technical capacity in the area of sustainable transport is built. For this reason, this action aims to: 1) establish within the MoT (or in close coordination with the MoT), a National Center of Excellence on Sustainable Transport. The CoE could be established as a technical advisory unit within MoT or within another national institution; and 2) develop and implement a national sustainable transport capacity building program to be guided and coordinated by the center of excellence in cooperation with relevant partners. The program will feature a national dialogue on the shared vision for sustainable transport, the readiness and feasibility for a transition toward public transport and more environmentally friendly transport policies and investments. Through this dialogue, specific interventions to build the capacity and awareness of public, private, and civil society sectors will be identified based on a gap analysis.</p>	
Action Objectives	<ul style="list-style-type: none"> ▪ Increase national stakeholders' exposure to sustainable transport policies and planning concepts, green transport technologies, and promote a deep understanding of the local green growth context. ▪ Establish a dialogue to discuss the costs and benefits of government vs. private sector investment in transport infrastructure and service provision. ▪ Identify business opportunities (supporting economic growth and job creation) that may result from pursuing a more sustainable transport agenda. ▪ Build local expertise in the field of sustainable transport, specifically improving the technical capacity in key government institutions.
Implementation Milestones	<ul style="list-style-type: none"> ▪ Detailed plan for the establishment of a new Center of Excellence on Sustainable Transport developed. This includes drafting a term of reference, budget, staffing plan and short-term plan of action. The center is planned to be in the MoT, or in a relevant partner institution. The CoE should serve as a technical advisory unit to the MOT regardless of its physical location. ▪ A full stakeholder map of transport sector service providers and investors, policy makers and issue experts based in Jordan and in the region.

Implementation Milestones	<ul style="list-style-type: none"> ▪ A baseline capacity assessment within government and private sector on the topic of low-carbon, sustainable transport in Jordan. Substantial consultations and public communications should be undertaken to get a full scope of the existing level of knowledge at key institutions, and in key segments of society (not only government). ▪ A training course for a set of critical stakeholders conducted in the English and Arabic languages, responding to the gaps in capacity to implement the Transport Sector GG-NAP 2021-2025 and the LNTS. The training course will be conducted and delivered by national institutions such as academic or research institutions/civil society, and international or regional partners. Hands-on, experiential, and results-oriented activities will be central to this effort. The training course should also address environmental and social safeguarding requirements, as well as green growth principals and objectives. ▪ Joint public-private policy recommendations developed jointly with all key stakeholders to outline strides toward a step-increase in investment in sustainable transport in Jordan.
Relevant Green Growth Objectives	<ul style="list-style-type: none"> ▪ Climate Change Adaptation and Mitigation - Reduce GHG emissions from the transport system by using low-carbon transport technology and through policies under the Avoid-Shift-Improve framework. ▪ Sustainable Economic Growth - 1) Increase the gross value-added of the freight and logistics sector through sustainable services and infrastructure; 2) Increase public funding for public transport infrastructure and service provision.

Estimated Implementation Period	
<i>Start Year</i> – 2021	<i>End Year</i> – 2023

Location(s)	National Level	Other key partners	Private sector logistics, tourism travel, public transport, and other tourism sector employees.
Implementing Stakeholders	<p><i>Lead</i> MoT</p> <p><i>Support</i> MoEnv, GAM, Local civil society and NGOs related to the transport sector</p>	Estimated Budget for this Action	USD 1,000,000

Financing Secured	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Potential Source of Funding	EU
Action leads to investment	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> This action is an Investment opportunity	Estimated Investment Size	n/a

Level of Priority			Readiness for Implementation				
Very High	High	Medium	1	2	3	4	5

Implementation Risk Mitigation Measures	<ul style="list-style-type: none"> ▪ All potential formulations for the CoE should be considered, including government, academic or research institutions with strong experience in the field of transport and logistics, energy, environment, etc. ▪ To ensure maximum effectiveness, the program should follow a strict results-oriented approach, first focusing on delivering tailored capacity building to the relevant policy and investment objectives. The national awareness and capacity building workshops should aim to produce deliverables with actionable recommendations and formulation of partnerships.
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TR09 | Develop a joint public-private strategy and roadmap to improve the environmental sustainability of the logistics sector

Description
<p>One of Jordan's national objectives is to become a regional logistics hub.⁶⁹ This is a role that Jordan has historically played due to its geographical location. However, regional political tensions and conflict, coupled with a lack of adequate infrastructure, have served as a barrier to the sector's growth. It is estimated that the transport and logistics sector in Jordan will reach a growth rate of 5 to 6% up to 2030⁷⁰. During the last decade, Jordan has considerably expanded its road network length, and upgraded the Queen Alia International Airport and the Aqaba Port. The MoT and others are also preparing for future implementation of a railway system, and after its implementation, the logistics sector is expected to substantially grow. However, the MoT has not yet formulated an implementation plan or strategic framework for growing the sector, and issues of environmental sustainability have not been considered strategically in the dialogue on sectoral expansion. Moreover, despite the continuous investments by the private sector, the sector struggles to increase its logistics performance as authorities have not focused on increasing efficiency and effectiveness, quality of services, cost-reducing measures, etc.</p> <p>There are abundant opportunities to promote resource efficiency, lower fuel costs, reduce GHG emissions and promote sustainable economic growth by increasing the sustainability of the freight transport sector. In the absence of a railway system, freight is transported by road, leaving ample opportunities to green the sector across its value chain. Potential interventions range from designing and implementing a stronger multi-modal freight transport network, to improving the logistics fleet's energy efficiency (where some progress has been made), to implementing information technologies aimed at optimizing asset utilization. This range of actions can be taken to not only green the sector but also to improve the quality of services, generate cost savings, and prepare Jordan for sustainable future growth when trade flows resume.</p> <p>The private sector is key to achieve a sustainable logistics sector in Jordan. Nearly 69.4% of the trucking fleet is owned by individuals, with a high percentage of the freight fleet having been in service for over 12 to 15 years. A fleet renewal project, for example, would put the majority of the cost burden on private companies, who would likely need access to flexible financing and potentially fiscal incentives. Sectoral experts suggest that Jordanian authorities must create a real partnership with the private sector to achieve the growth forecast of the logistics sector.⁷¹ Moreover, leading private sector companies in the market are already looking for ways to green their activities.</p> <p>The purpose of this action is to undertake an innovative policy dialogue mechanism whereby both the government and the private sector can jointly plan and implement private sector-based sustainable transport projects that will simultaneously increase private sector profits and improve the environmental and safety performance of the freight logistics sector. The public-private dialogue approach is a useful tool for market development and can help both sectors clarify their intentions, and lead to stronger collaboration for the good of the economy.</p>

Action Objectives	<ul style="list-style-type: none"> ▪ Increase the quality and quantity of public-private exchanges on the topic of transport in the context of Jordan's tourism sector and its implications on broader local and national economic development. ▪ Develop a pathway toward increased investment in sustainable transport services (mass transit, inter-city transport and low-carbon vehicles) in the tourism sector. ▪ Clarify public and private roles and responsibilities in optimizing logistic operations in Jordan, including those required for greening the sector while achieving the forecasted growth rate.
Implementation Milestones	<ul style="list-style-type: none"> ▪ One assessment study of the green logistics performance of Jordan's freight logistics sector. This study should also determine the impact on overall energy consumption, GHG emissions, fuel cost and service quantity and quality. ▪ Public-private dialogue conducted on the topic of green logistics, building capacity and awareness of stakeholders on the relevance and opportunities in the sector. ▪ Mapping of green road freight solutions (immediate actions) needed to accomplish the previously established climate objectives, based on their potential energy or CO₂ reductions, the feasibility of their adoption at scale in the Jordan context and its bankability. This mapping should be arranged jointly with public and private stakeholders.

⁶⁹ Long-term National Transport Strategy.

⁷⁰ Jordan Investment Commission. "Transportation and Logistics Sector in Jordan." 2018.

⁷¹ Al-Masaeid, Hashem R, and Amir Shtayyat. "Performance of Urban Transit in Jordan." Journal of Engineering Research and Applications 6, no. 83 (2016): 7-12.

Implementation Milestones	<ul style="list-style-type: none"> ▪ A detailed strategy and implementation roadmap for greening the logistics sector. The roadmap should: <ul style="list-style-type: none"> ▪ Highlight long-term strategic actions needed to further green the logistics sectors, in line with the sectoral and national strategy documents as well as international best practice, and in line with the investment and growth objectives of private sector firms operating in Jordan. ▪ Highlight short and long-term actions to be realized under a public-private cooperation scheme. ▪ Identify implementation barriers for both immediate and long-term actions, highlighting necessary policy interventions and investments needed to achieve the intended results. ▪ Provide a detailed plan for capacity building of all related stakeholders. ▪ Provide detailed communication and coordination framework for road map implementation. ▪ Feasibility assessment of three major priority investments needed to bring momentum to greening the logistics sector.
Relevant Green Growth Objectives	<ul style="list-style-type: none"> ▪ Sustainable Economic Growth – Increase the gross value-added of the freight and logistics sector through sustainable services and infrastructure. ▪ Climate Change Adaptation and Mitigation – The reduction in GHG emissions from the logistics sector will be achieved through low emission logistics’ activities and practices.

Estimated Implementation Period	
<i>Start Year</i> – 2021	<i>End Year</i> – 2022

Location(s)	National Level	Other key partners	Private sector service providers in the freight and logistics sector (Aramex, DHL, food delivery companies, Uber-Careem, etc.).
Implementing Stakeholders	Lead MoT Support Ministry of Industry, Trade and Supply, MEMR, Ministry of Finance, Freight Forwarders Association, Jordanian Logistics Association, Chamber of Commerce, others	Estimated Budget for this Action	USD 1,000,000

Financing Secured	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Potential Source of Funding	Government/private sector mix
Action leads to investment	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No - No direct investments are connected to this action, but identification of needs and gaps may help decision makers better understand how to prioritize and attract transport sector investment needs. <input type="checkbox"/> This action is an Investment opportunity	Estimated Investment Size	-

Level of Priority			Readiness for Implementation				
Very High	High	Medium	1	2	3	4	5
<ul style="list-style-type: none"> ▪ Several logistics projects are under development at MoT (dry port projects). 							

Implementation Risk Mitigation Measures	<ul style="list-style-type: none"> ▪ When identifying green logistics actions, the level of locally available technology will be considered. In the absence of cutting-edge technology, appropriate technology will be employed instead. Therefore, technology risk would not be a major concern. ▪ The implementation of a green logistics program requires financial support from the government. Thus, various financial models involving the private sector will be proposed.
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TR10 | Develop and implement a public-private partnership for improved parking management in Amman

Description
<p>With a current population of nearly 4 million people, Amman is considered to be one of the fastest-growing cities in the world.⁷² The level of access to public transport services has not kept up with this growth, resulting in an increasing number of cars on the city's streets, and increased congestion. There are economic, environmental, and social costs to this congestion, including an estimated 1 billion JD in 2015 alone to motorists as a result of lost time and idling fuel costs.⁷³ There are some well-known challenges to improved parking management in Amman. First, parking regulations are unevenly enforced. Second, although the cost of parking is considered to be low, illegal parking on sidewalks has destroyed pedestrian infrastructure. GAM has attempted to provide parking alternatives. For example, in 2016, GAM designated plots of land to be converted into free parking lots to ease congestion in the capital, yet informal valet services are common. Additionally, GAM started installing parking meters in heavily congested commercial areas, setting parking hours in downtown Amman, and regulating valet services.⁷⁴</p> <p>Parking management can decrease ambient air pollution, reduce losses in economic productivity due to traffic congestion, increase the walkability of urban areas, and promote the transition to smarter cities. Upgraded on-street parking would provide a suitable environment to install on-street EV charging and can be linked with GAM's ITS. To achieve these objectives, several measures and investments are needed, including but not limited to regulatory reforms, improved resources for enforcement, development of an attractive business model and access to finance for infrastructure investment.</p> <p>The purpose of this action is to take the first step towards implementing improved parking management in the city of Amman by 1) assessing the full impact of the current parking management system on the economic, social, and environmental performance of the city; 2) reviewing the regulatory and enforcement situation for parking in Amman, and 3) developing the economic, technical, and financial feasibility studies to promote parking management. Implementation of this action would lead to the development of a funding or investment proposal for an improved parking management system. The proposed system would be designed to achieve maximum green growth impact, with the optimal business model to ensure sustainability. The proposal can be submitted for support by climate finance institutions, local investors or to seek FDI.</p>

Action Objectives	<ul style="list-style-type: none"> ▪ Decrease ambient air pollution caused by idling vehicles in Amman. ▪ Recover losses in economic productivity due to traffic congestion. ▪ Increase the walkability of Amman. ▪ Promote the implementation of a smart city infrastructure.
Implementation Milestones	<p>The action will develop a comprehensive parking infrastructure management policy and investment plan for the city of Amman. It will also develop the necessary studies and arrangements for a parking management PPP. Specific milestones include:</p> <ul style="list-style-type: none"> ▪ A study assessing the state of existing parking infrastructure in highly congested areas of the city, the regulatory framework guiding their management, and gaps in enforcement (including the role of law enforcement, signage, public awareness, etc.). The TMMP for Amman indicates priority sites.⁷⁵ ▪ A market assessment study to gauge the level of demand for parking infrastructure in the identified congestion zones. This will be used to develop a business model for a set of parking management projects and related services to be financed potentially through a public-private partnership and linked to the ITS electronic payment system. ▪ One set of recommendations on regulatory updates and develop a capacity/training needs assessment to prepare the enabling environment for effective implementation of parking management infrastructure.

⁷² Nordregio, "Amman, One of the Fastest Grown Cities in the World, Is Moving towards Sustainable City Planning," 2019.

⁷³ The Jordan Times, "Amman Gridlock Costs Motorists JD1b a Year, Says GAM," 2015.

⁷⁴ Muath Freji, (2016). GAM to install free parking lots on municipal land. Retrieved from: <https://www.jordantimes.com/news/local/gam-install-free-parking-lots-municipal-land%E2%80%99>

⁷⁵ GAM, "Transport and Mobility Master Plan for Amman," 2010, page 66.

Implementation Milestones	<ul style="list-style-type: none"> ▪ A parking infrastructure investment plan, prioritizing locations and types of investments needed. This includes the prioritization of walkability improvement actions needed to connect the selected parking management sites with related social hubs in the area. ▪ One training program for the city's parking management staff and law enforcement officers; and work with law/traffic enforcement officials to develop an implementation roadmap responding to the objectives of the 2nd Transport and Mobility Master Plan for Amman. ▪ A public awareness campaign implemented about the improved parking system in Amman.
Relevant Green Growth Objectives	<ul style="list-style-type: none"> ▪ Sustainable Economic Growth – Increase access to reliable, affordable, and safe public transport services in urban areas. ▪ Social Development and Poverty Reduction - Enhance the safety and walkability of pedestrian walkways in urban areas. ▪ Resource Efficiency - Promote the use of electric and hybrid vehicles through strengthened regulations and incentives; use technology to improve traffic conditions and aid in traffic management. ▪ Climate Change Adaptation and Mitigation - Reduce GHG emissions from the transport system by using low-carbon transport technology and through policies under the Avoid-Shift-Improve framework.

Estimated Implementation Period	
<i>Start Year</i> – 2021	<i>End Year</i> – 2023

Location(s)	Greater Amman	Other key partners	Donor agencies
Implementing Stakeholders	<i>Lead</i> GAM <i>Support</i> MoT, Ministry of Public Works and Housing	Estimated Budget for this Action	USD 1,000,000

Financing Secured	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Potential Source of Funding	To be determined (TBD)
Action leads to investment	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> This action is an Investment opportunity	Estimated Investment Size	USD 10,000,000

Level of Priority			Readiness for Implementation				
Very High	High	Medium	1	2	3	4	5
<ul style="list-style-type: none"> ▪ Pilot/demonstration project has been implemented in one area of Amman, but expansion plans are not developed. ▪ This is a priority project in the GAM-TMMP update. 							

Implementation Risk Mitigation Measures	<ul style="list-style-type: none"> ▪ Walkability is an essential element for the success of any parking project, and therefore, the investment plans suggested will also include prioritization of the necessary walkability improvement actions.
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TR11 | Develop a national electric mobility strategy and action plan

Description	
<p>The transport sector is the second largest contributor to emissions in the cities of Jordan, with on-road vehicles contributing the most transportation emissions⁷⁶. To reduce local air pollution caused by the tailpipe emissions of the increasing numbers of private vehicles, reduce Jordan's dependence on imported energy and lower its reliance on gasoline for mobility, the country has developed a program of incentives to encourage the use of EVs. The City of Amman has also prioritized the promotion of EVs and related support actions (e.g. charging stations) to improve overall energy efficiency^{77,78}. Beginning in 2015, Jordan provided 100% customs exemption for any EV (EV) imported to Jordan. By 2017, Jordan had positioned itself as the pioneer in electric car mobility in the MENA region, experiencing exponential growth in the uptake of electric cars, moving from 9 newly registered EVs in 2015 to over 21,000 at the end of 2019⁷⁹. This growth was driven by the competitive prices of EVs compared to conventional options – due especially to the prohibitively high costs of gasoline for the average car owner, and the lower cost of import.</p> <p>However, Jordan's EV market development has stagnated and the future of other electric mobility transport projects (public and private), and their energy components, is uncertain. Despite the relatively high level of demand generated through customs exemptions, the government has not been able to provide potential investors in charging infrastructure and services with a clear strategic vision or policy direction on EVs. While some studies have also shown great potential for electric public transport, there is still no strategy or official e-mobility policy adopted by the government. At the same time, the customs exemption for EVs has fluctuated in 2019, leading to a 70% drop in EV sales⁸⁰. A predictable future uptake scenario, guided by a clear and well-communicated government approach, is critical to enable investment in the sector. For example, potential investors in the EV charging services market need reassurance that they can make a return on investment. At the same time, local public transport service providers need to know the seriousness of the government's intention to transition toward electric technologies. To achieve this, multi-sector coordination and policy development inclusive of the energy, environment, municipal transport, and waste sectors is necessary.</p> <p>The purpose of this action is to bring together relevant national stakeholders to develop a National Electric Mobility Strategy. The strategy will build on existing recommendations on e-mobility in Jordan, and guide the government's interventions for EV market development, e-mobility investment, and other issues relevant to electric transport (including clean energy generation, battery storage and waste, smart-city links, TVET and university curricula, etc.).</p>	

Action Objectives	<ul style="list-style-type: none"> Develop the long-term planning and policy framework for e-mobility implementation in Jordan. Improve inter-ministerial coordination and stakeholder collaboration on the topic of e-mobility.
Implementation Milestones	<ul style="list-style-type: none"> Literature review study of existing research providing e-mobility policy recommendations for Jordan. One set of prioritized policy recommendations following a methodology that evaluates policies' expected impacts and implementation feasibility, especially geared towards green growth objectives and fiscal impact. All-inclusive national stakeholder consultation program to corroborate the prioritization of policies' implementation. Strategy and implementation roadmap developed for e-mobility in Jordan.
Relevant Green Growth Objectives	<ul style="list-style-type: none"> Resource Efficiency – Promote the use of electric and hybrid vehicles through strengthened regulations and incentives. Enhanced Natural Capital - Reduce air pollutant emissions (PM_{2.5}, PM₁₀, NOx, and SOx) from road transport. Climate Change Adaptation and Mitigation – Reduce GHG emissions (CO₂) from the transport system.

⁷⁶ MoEnv & GAM. "The Amman Climate Plan A vision for 2050," 2019.

⁷⁷ Jordan LNTS and Action Plan | Drafting of the Strategy: main steps. Pg. 104 Retrieved from mot.gov.jo.

⁷⁸ MoEnv & GAM. "The Amman Climate Plan A vision for 2050," 2019.

⁷⁹ Department of Statistics.

⁸⁰ The Jordan Times. "Electric Car Sales Drop by 70% as New Tax Goes into Effect," 2019.

Estimated Implementation Period	
<i>Start Year</i> – 2021	<i>End Year</i> – 2022

Location(s)	National Level	Other key partners	-
Implementing Stakeholders	<i>Lead</i> MoT <i>Support</i> MoEnv, MEMR, Ministry of Industry, Trade and Supply, Ministry of Public Works and Housing, Ministry of Digital Economy and Entrepreneurship, Ministry of Finance, Royal Hashemite Court, GAM, Aqaba Special Economic Zone Authority, EV Owners Association, etc.	Estimated Budget for this Action	USD 1,000,000

Financing Secured	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Potential Source of Funding	AFD, EBRD
Action leads to investment	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> This action is an Investment opportunity	Estimated Investment Size	-

Level of Priority			Readiness for Implementation				
Very High	High	Medium	1	2	3	4	5
<ul style="list-style-type: none"> Royal Court, USAID, GGGI have undertaken analysis related to electric mobility that can be built upon for this action. 							

Implementation Risk Mitigation Measures	<ul style="list-style-type: none"> Coordination among stakeholders is critical. Several institutions have relevant knowledge and experience around different elements of electric mobility (electricity tariffs, energy strategy, municipal transport integration, public charging station placement, etc.). Up-front learning and capacity building should be conducted ahead of developing the strategy for focal points from key stakeholder institutions, including energy, transport and environment ministries, and GAM.
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TR12 | Design and implement a public transport electric mobility pilot and capacity building program in Amman

Description	
<p>The Greater Amman Municipality (GAM) aims to transition toward a cleaner public transport system, with the short-term goal of electrifying part of its growing municipal bus fleet. GAM has some experience and a clear intention to pursue electric mobility, demonstrated by its decision to purchase 100 electric cars for city government use, as well as 30 electric taxis as a pilot, and aims to provide charging services and scale-up the initiative. At the same time, GAM has recently made its first major steps toward becoming a “smart city” by investing in an ITS, which will allow it to collect a significant amount of data about transit patterns in the city, and make smarter decisions for traffic management. Buses are a critical component of GAM’s mass transit system; the city has 485 municipal buses (using low-grade diesel fuel), 135 Euro-V diesel buses (which will be used on the BRT system upon completion) and plans to purchase at least 150 additional buses in 2020-2021. GAM’s “Amman Vision Company” was established in 2019 to oversee the city’s bus transport operations and management, and to advise on municipal transport investment.</p> <p>Although GAM has expressed interest in clean bus alternatives, and despite the many potential economic, environmental, and social benefits associated with e-bus and electric mass transport, authorities are not fully prepared for such investments. First, decision makers at all levels are unfamiliar with e-bus technology, and unsure about its technical suitability for the Jordanian context. Second, while e-buses and battery technology are becoming cheaper every year, the higher up-front capital cost for e-buses is seen as prohibitive by both public and private sector investors in Jordan. Finally, the full range of possibilities, opportunities and challenges associated with e-buses has not been analyzed, so the cost-benefit ratio for e-buses is not well understood or internalized for government investors.</p> <p>The purpose of this action is to address the investment barriers above by providing the necessary analysis, technical training and hands-on experience to GAM’s public transport directorate and the Amman Vision Investment and Development (AVID). The pilot project will include the purchase (through a grant) of a small fleet of 1-3 e-buses to be used in the municipal fleet where possible for on-route testing. This pilot aims to increase government and public exposure to e-buses and collect real-time data on the costs and benefits. Through this action, stakeholders will be able to better understand the electric technical opportunities and challenges associated with e-buses, and the technical feasibility and bankability of electrifying the public bus transport system will be further solidified. The program will build upon the existing feasibility and economic case studies for the electrification of the Amman BRT system, and include a technical, financial, and economic feasibility study for an expanded fleet of electric buses for the city of Amman.</p>	
Action Objectives	<ul style="list-style-type: none"> ▪ Introduce the first electric bus and charging infrastructure into Amman’s municipal transit system to evaluate e-bus viability and replicability. ▪ Collect data to undertake better cost-benefit analysis for e-buses in Jordan. ▪ Support GAM with its decision-making on key elements of electric mobility. ▪ Increase awareness in the general public and among local transportation sector stakeholders about e-buses, and their benefits and applications.
Implementation Milestones	<ul style="list-style-type: none"> ▪ Pilot Formulation <ul style="list-style-type: none"> ▪ Assessment of the technical specifications preferred for the pilot e-buses, operations analysis (needs and gaps) and charging options. ▪ Investment and cost-benefit analysis developed in close collaboration with donors and bus manufacturers; review of the legal and regulatory barriers or adjustments needed to facilitate implementation of the pilot project. ▪ A results framework developed to set the intended environmental and social objectives of the pilot, including an estimation of economic savings from air quality improvement, GHG emissions reductions and proposal of solutions for handling batteries at the end of their lifecycles. ▪ Scale up Project Preparation <ul style="list-style-type: none"> ▪ Based on the findings of the pilot project, develop a project concept note for finance by development agency, potentially leveraging climate finance. ▪ Undertake the pre-feasibility analysis and feasibility studies to size the investment such that the project is bankable by a private sector investor, or through a PPP.

Relevant Green Growth Objectives	<ul style="list-style-type: none"> ▪ Resource Efficiency – Promote the use of electric and hybrid vehicles through strengthened regulations and incentives. ▪ Enhanced Natural Capital - Reduce air pollutant emissions (PM_{2.5}, PM₁₀, NOx, and SOx) from road transport. ▪ Climate Change Adaptation and Mitigation – Reduce GHG emissions (CO₂) from the transport system.
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Estimated Implementation Period	
<i>Start Year</i> – 2021	<i>End Year</i> – 2022

Location(s)	Greater Amman	Current Status	Concept note development
Implementing Stakeholders	<i>Lead</i> GAM, AVID <i>Support</i> MoT, MoEnv, MEMR	Estimated Budget for this Action	USD 5,000,000

Financing Secured	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Potential Source of Funding	AFD, EBRD
Action leads to investment	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> This action is an Investment opportunity	Financial Instrument	Grant

Level of Priority			Readiness for Implementation				
Very High	High	Medium	1	2	3	4	5
<ul style="list-style-type: none"> ▪ Feasibility analysis for e-buses for the Amman BRT system has been conducted by GGGI and can be used to develop this pilot project. ▪ Some private sector interest has been demonstrated in this project. 							

TR13 | Establish low-carbon municipal bus fleets for Irbid, Zarqa and Madaba municipalities

Description
<p>According to Jordan's Third National Communication to the UNFCCC, the transport sector accounts for 16% of the country's GHG emissions, and 40% of air emissions harmful to human health are emitted from the combustion of conventional engine vehicles. Fossil fuel-powered cars are the primary source of these emissions; while at the same time being the primary source of transport for citizens to and from school, work and various markets. The lack of access to transport is a serious social and economic barrier. A large majority of women report turning down employment or not seeking employment due to the lack of safe and reliable transport services. Due to the high cost of fuel (petrol), the average annual expenditure on transport for citizens of Amman was roughly 18% of their income in 2017-18. However, in places like Irbid, Zarqa and Madaba, where incomes tend to be much lower, this is likely much higher.</p> <p>While the City of Amman has an improving network of public transport infrastructure, smaller municipalities in Jordan lack transport planning and investment capacity, with low financial resources to invest in safe and clean rolling stock for mass-transit purposes. Financing any interventions in this regard will require concessional finance and attractive terms. However, as the population of secondary cities continues to grow, the establishment of public transport services is essential for both socioeconomic development, and mitigation against climate change. It is estimated that 80% of public transport operators (all types of buses) are individual operators, making it difficult to plan and implement system-level changes. However, with the passage of the Passenger Transport Law in 2017, individual operators were given five years to form conglomerates and organize into a smaller number of companies to address this issue. The MoT and Land Transport Regulatory Commission are responsible for supporting municipalities with the planning and development of their municipal transport infrastructure, although there is certainly a role for the Ministry of Local Administration to play as the process of decentralization continues. Within this complex governance and market setup, it has been difficult to establish high quality (affordable, safe, and reliable) transport services in Jordan's smaller cities.</p> <p>The purpose of this action is to promote the achievement of Jordan's socioeconomic and climate change mitigation targets by introducing low-carbon public transport in the cities of Irbid, Zarqa and Madaba. These are some of the quickest-growing cities in Jordan, many of which are host communities for refugees. Through implementing this action, the country will both improve access to transport for key segments of the population, reducing overall household expenditure on transport. The specific technology to be used will be determined based on feasibility studies, and could include natural gas, biogas, fully electric or hybrid-electric options.</p>

Action Objectives	<ul style="list-style-type: none"> Undertake the necessary feasibility analysis to attract investment in public transport services and rolling stock for secondary cities in Jordan. Increase access to transport services for people in secondary cities, catalyzing modal shift and behavioral change nationwide. Reduce GHG emissions from the transport sector in accordance with Jordan's NDC.
Implementation Milestones	<ul style="list-style-type: none"> Undertake market assessment and options analysis for low-carbon bus options for the cities of Irbid, Zarqa and Madaba. The market assessment will determine the ability and willingness of citizens to pay for public transport in these areas. Based on available demand studies and route plans, the total number of buses will be determined. Then, appropriate low-carbon buses will be assessed for their environmental and service quality, and regulatory frameworks will be evaluated to provide recommendations for the optimal type of low-carbon bus and power source. Undertake financial and economic feasibility analysis of the recommended projects, including identifying the size and source of any subsidies that may be needed to make the services accessible/affordable. A series of public consultations will be held with citizens in these municipalities to promote inclusive planning and selection of low-carbon technologies. These consultations will aim to raise citizens' awareness of the benefits of low-carbon public transport from the environmental, social, and economic perspectives, and to ensure local ownership of the project. <p>NOTE: Full GCF concept notes for this project have been prepared by GGGI for submission through the Cities and Villages Development Bank in 2020.</p>

Relevant Green Growth Objectives	<ul style="list-style-type: none"> ▪ Sustainable Economic Growth – Increase access to reliable, affordable, and safe public transport services in urban areas; Improve connectivity and accessibility for passengers and goods between and within governorates and key growth areas. ▪ Social Development and Poverty Reduction – Increase access to reliable, affordable, and safe public transport services for all, including women, youth, and rural communities. ▪ Climate Change Adaptation and Mitigation – Reduce GHG emissions (CO₂) from the transport sector.
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Estimated Implementation Period	
<i>Start Year</i> – 2021	<i>End Year</i> – 2025

Location(s)	Irbid, Zarqa, Madaba	Other key partners	GGGI
Implementing Stakeholders	<p><i>Lead</i> MoT, Ministry of Local Administration, Municipalities of Irbid, Zarqa and Madaba</p> <p><i>Support</i> MoEnv, Cities and Villages Development Bank</p>	Estimated Budget for this Action	1,000,000 for feasibility assessments; 1,000,000 for technical assistance (awareness and capacity building) with municipalities

Financing Secured	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Potential Source of Funding	GCF (for feasibility studies), EBRD, AFD, Private Sector (if PPP approach is decided to be appropriate), government budget
Action leads to investment	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> This action is an Investment opportunity	Estimated Investment Size	USD 20,000,000 (dependent on feasibility studies)

Level of Priority			Readiness for Implementation				
Very High	High	Medium	1	2	3	4	5
<ul style="list-style-type: none"> ▪ GGGI undertook a full technical and financial feasibility study for electric buses in the context of GAM, which found that, under the right financial conditions, the project is feasible. The lessons learned from that experienced can be applied to other municipal contexts. ▪ A GCF Concept Note has been prepared for this for submission in 2020. 							

Implementation Risk Mitigation Measures	<ul style="list-style-type: none"> ▪ Depending on the findings of the financial feasibility study and market assessments, financial arrangements to subsidize the cost of service provision may be required.
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ANNEX 1: Transport Sector Green Growth Results Framework

The Green Growth Results Framework below was constructed with the support of the MoT, DOS, and other national actors in accordance with international best practice in the field of green growth. This collection of indicators can be used to better understand the availability of green growth-

related data in Jordan. The Government of Jordan is continuously striving to improve the quantity and quality of data for decision making in the area of sustainable development and this framework will be continuously revisited and improved throughout the implementation phase.

Indicator	Definition	Baseline	Target	Responsible	Reporting and SDG	Timeline
Enhanced Natural Capital						
NOx and SOx pollution	Microgram/cubic meter (base value will vary for each station)	TBD	65 (2019) 2030 target to be set after sector actions are established	MoEnv	MoEnv Strategic Plan	TBD
Data Source http://moeaq.unitecjo.com/public/						
Sustainable Economic Growth						
Contribution of the transport sector to GDP	% GDP contribution of "Transport, Storage and Communications" sector relative to national GDP (at constant 1994 market prices)	9.31% (2017)	9.41% by 2025 2030 target to be set after sector actions are established	DOS	Vision 2025	Annual Latest is 2017
Data Source DOS Jordan Statistical Yearbook 2016, issue 67, table 23.11						
% workers in the transportation sector	Total # workers in the "Transport, Storage and Communications" sector (age 15 +), relative to total national employment	5.3% of total employment (2017)	2030 target to be set after sector actions are established	DOS		Annual Latest is 2017
Data Source Employees and Enterprises by Economic Activity and Size Group of Employment For Year 2016 For Both Public and Private Sectors http://www.dos.gov.jo/owa-user/owa/employment.emp_show_t1						

Indicator	Definition	Baseline	Target	Responsible	Reporting and SDG	Timeline
Social Development & Poverty Reduction						
# buses per thousand people	# public buses in the country, divided by thousand population	1.15 (2017)	1.25 by 2025 2030 target to be set after sector actions are established	MoT	Vision 2025 SDG 11.2.1 Proportion of population that has convenient access to public transport, by sex, age, and persons with disabilities (C110201)	Will be annual, starting in 2017
Data Source Uses data from licenses and registrations, exports & imports - should be in the environmental statistics for 2017. Number of vehicles operating in the Kingdom: http://www.mot.gov.jo/EchoBusV3.0/SystemAssets/PDFEN/New%20Statistics/Number%20of%20vehicles%20operating%20in%20the%20Kingdom%20during%20the%20period%20(2010-2013).pdf						
% female workers in the transport sector	# female workers in the "Transport, Storage and Communications" sector (age 15 +), relative to total employment in the sector	0.8% (2017)	2030 target to be set after sector actions are established	DOS		Annual Latest is 2017
Data Source DOS Employees by Economic Activity, Nationality and Sex For Year 2016 For Both Public and Private Sectors http://www.dos.gov.jo/owa-user/owa/employment.emp_show_t3						
% youth employment in the transport sector	Total # youth workers (aged 15-24) employed in the "Transport, Storage and Communications" sector, relative to total employment in the sector	TBD	2030 target to be set after sector actions are established	DOS		Available annually, through special data request Latest is 2017
Data Source Will require special data request						
Resource Efficiency						
# and % green vehicles	# hybrid and EVs AND # hybrid and EVs, compared to total # registered vehicles in Jordan	TBD	2030 target to be set after sector actions are established	Traffic Department MoT		Annual
Data Source Available through MoT by special request – data not public.						
Climate Change Adaptation and Mitigation						
Total national (GHG) emissions from the transportation sector	Million metric tons of CO ₂ e emissions (MtCO ₂ e)	4.706 MtCO ₂ e in 2006 (16.4 % of Jordan's total GHG emissions)	2030 target to be set after sector actions are established	MoEnv	National Communication to UNFCCC	2014 Will be annual once MoEnv has national inventory
Data Source Third National Communication to UNFCCC						

ANNEX 2: Links to Long-term National Transport Strategy and Action Plan 2015-2030

	Actions	Long-term National Transport Strategy and Action Plan 2015-2030		
		Challenges and Barriers	Objectives/ Targets	Actions/measures proposed in strategy
TR01	Develop and/or update Transport and Mobility Action Plans and CIP for the secondary metropolitan areas of Mafraq, Zarqa, and Irbid	Lack of appropriate supporting policies	Review and update existing policy documents and strategies	<ul style="list-style-type: none"> Development of a National Transport Model)
TR02	Activate the Land Transport Fund and identify mechanisms to raise capital for public transportation infrastructure	Shortage of financial resources	Guaranteeing a flow of resources for the implementation of the Strategy is the core precondition for the success.	<ul style="list-style-type: none"> Recommended pricing policies and the possibility to involve private funding
TR03	Implement transport sector governance enhancement program and reform agenda to increase the effectiveness and efficiency of the transport sector policymaking process	Complex institutional structure within the transport sector itself and the resulting issues with responsibilities, financing, regulation, and operation of the different modal sectors and with licensing of vehicles, services etc.	Key institutional reforms and sector management including operational, regulatory, and licensing issues	<ul style="list-style-type: none"> Improvement on communication and cooperation at Ministerial Level (MoT, Ministry of Public Works and Housing, Ministry of Planning, Ministry of Trade) Improvement of coordination between the different levels of each modal sector Clear responsibilities for planning, regulating, financing, operating the transport systems in the different modal sectors Procedures to institutionalize coordination and regulation across levels and across modal sectors
TR04	Scale up the provision of public-school bus services in all municipalities (Scale-up Smart Move Project)	n/a	n/a	n/a

	Actions	Long-term National Transport Strategy and Action Plan 2015-2030		
		Challenges and Barriers	Objectives/ Targets	Actions/measures proposed in strategy
TR05	Implement a pedestrian green infrastructure enhancement program in local commercial areas and near public transport	External costs to other road users, like pedestrians, including the risk of getting involved in an accident (transport safety) due to improperly designed infrastructure and irresponsible drivers' behavior	Providing a greater degree of accessibility to users to secure access to essential services, particularly when provision of public transport services is poor or inadequate	<ul style="list-style-type: none"> ▪ Infrastructural measures aimed at enhancing road safety will address crossing of settlements (e.g., for dual carriageways: insurmountable central barrier, side service roads, pedestrian overpass, vehicle underpass, speed limits' reduction; for single carriageways: speed break devices as appropriate, parking lane and lay-bys, sidewalks all along, level pedestrian crossing with adequate protection) and pavement widening ▪ Physical measures designed to enhance the safety of the road system ▪ Design transport around walking, cycling and public transport
TR06	Develop a public-private dialogue and roadmap for improving road transport services linked to the tourism sector	Lack of financial resources	Identify additional sources for funding of the transport sector, including the involvement of the private sector	<ul style="list-style-type: none"> ▪ Create service areas for passengers and buses and service areas for trucks at border crossings: privates could manage the services in return for the fees, with the other revenues deriving from the operation of the terminals
TR07	Support the deployment of Intelligent Transportation Systems (ITS) to allow a modal and fare integration of the public and private transport systems in the city of Amman	Uploading data in the system is somehow intricate and confirmations about successful uploading are missing. As a result of this, not all the uploads are successful from the concerned authority side. Whenever new data about the status and the specifications of one project are uploaded in the system, there is no immediate way to detect what has been changed	Promote intramodality	<ul style="list-style-type: none"> ▪ Upgrade of facilities for passengers. Guidelines for bus terminals and bus stops have to be defined (location, layout, facilities and services to passengers, information provision to travelers also by means of ITS, interchanges and intramodality) and main terminals have to be upgraded whenever not compliant with basic standards

	Actions	Long-term National Transport Strategy and Action Plan 2015-2030		
		Challenges and Barriers	Objectives/ Targets	Actions/measures proposed in strategy
TR08	Establish a national center of excellence and capacity building program for sustainable transport	Insufficient level of education for transport staff and inadequate trained manpower	Carry out training and capacity building programs for implementing authorities	<ul style="list-style-type: none"> ▪ Training and education of maritime manpower ▪ Implementing or strengthening the business management training (actions to be put in place should include voluntary courses and manuals both for business managers of freight companies and individual operators, as well as incentives for operators to work with legality (i.e. avoiding the use of unlicensed or underage drivers)) ▪ Drivers training on work intensity, driving times and rest periods
TR09	Develop a joint public-private strategy and roadmap to improve the environmental sustainability of the logistics sector	Old fleets, excess of supply, small dimension of the truck companies, inefficiencies as low loading factors	Improvement of vehicle standards to reduce safety concerns and emissions from trucks Make the best of private participation in the transport sector	<ul style="list-style-type: none"> ▪ Purchase old trucks & re-export or scrap ▪ Impose higher registration fees for old trucks and/or define restrictions on operational age ▪ Develop regulations on emission, trip inspections, maintenance standards, hours of work ▪ Implement dangerous goods regulations
TR10	Develop and implement a public-private partnership for improved parking management in Amman	Parking at illegal locations, double-parking	Reduce traffic congestion	<ul style="list-style-type: none"> ▪ Develop parking lane and lay-bys ▪ Implement new public parking ▪ Establish service areas for trucks (including parking areas to release traffic congestion) ▪ Develop a new car park for 1000 cars as part of the AMMAN MARKA IA Rehabilitation Project ▪ Implement Parking Management System (GAM Transport and Mobility Master Plan)
TR11	Develop a national electric mobility strategy and action plan	A growing number of vehicles and the consequent high emission levels caused by poor quality propellants heavily contribute to serious air pollution and health problems	<ul style="list-style-type: none"> ▪ Promotion of non-motorized transport modes ▪ Make the best of private participation in the transport sector 	<ul style="list-style-type: none"> ▪ Promotion of alternative fuels and vehicles (such as LPG, CNG, hybrids, EVs) and related support actions (network of fueling and charging stations etc.)
TR12	Design and implement a public transport electric mobility pilot and capacity building program in Amman	See above	See above	<ul style="list-style-type: none"> ▪ See above
TR13	Establish low-carbon municipal bus fleets for Irbid, Zarqa and Madaba municipalities	See above	See above	<ul style="list-style-type: none"> ▪ See above

