CREATE - City Report

Amman, Jordan

Past, Present and Future mobility challenges and opportunities in Amman

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I.   Introduction

As part of the CREATE project, research work was undertaken in all ten CREATE cities to gain an overview of the conditions linked to mobility and assess data availability in each city. City partners provided relevant qualitative and quantitative information about their city and hosted a Focus Group involving key local stakeholders. This report summarises research findings in the city of Amman, Jordan. A monograph reports on the analysis of the Amman's Focus Group, complemented by relevant data from the City Profile. This report will serve as the basis for the CREATE's cross-city comparison.

II.   Context & Methods

Amman's City Report is based on the combined analysis of the 'city profile' quantitative and qualitative data provided by the city of Amman and the analysis of the Focus Group.

On the 19th of July 2017, the city of Amman hosted a Focus Group that aimed to gather key stakeholders to discuss past, current and future issues relating to urban transport in Amman. In total 16 participants attended the Focus Group. The participants were carefully chosen as stakeholders representing different key sectors in Amman. A range of experts, who all demonstrated deep understanding of Amman's past, present and future transport and urban planning, took part in the Focus Group. 10 participants represented Amman's local authority, including eight local transport policy-makers from the transport department and two participants from the planning department.   Three participants were academics. Of those three, two were from engineering departments and one from an urban planning department. In addition, two experts working for engineering and transport consultancy companies participated, and one participant represented an association focusing on urban mobility.

The focus group was conducted in English by Dr. Cavoli from UCL. It followed a topic guide which was previously sent to all participants (See Annex A). The topic guide is divided into three parts. The first part focuses on understanding Amman's past related to urban transport and planning. The second part addresses the present situation, including defining the biggest challenges the city faces. Finally, future challenges and opportunities related to urban mobility and planning in Amman were discussed. In order to analyse data from the Focus Group and undertake a cross-city comparison, a framework matrix was established following the topic guide. First, key data were transcribed from the recording of the focus group. Second, content analysis was applied. The results are summarised in the monograph below.

The City Reports and the cross-city comparison work undertaken in the context of CREATE aim to improve policy-making and planning in Amman and other CREATE cities by providing tailored advice for each city.

Where opinions are expressed about the causes of change or the significance of specific aspects, these are with the sole intention of guiding further analysis under the CREATE programme and to act as a starting point for that further qualitative analysis.

III.   Amman Monograph

Understanding the past

The first question discussed during the focus group was '*How has urban transport and land-use evolved over the past 10 to 15 years in Amman?* Participants were asked to think about any significant societal, demographic or cultural changes, or changes related to mobility demand. Participants were also asked to describe *how public authorities responded to those changes. How have urban transport and land use policies evolved over the past 10 to 15 years?*

Extreme demographic changes

Reflecting on the past, all participants agreed that the most significant change the city of Amman has experienced over the past 10 years is related to demographics. Estimates indicate that Amman's population has doubled within less than a decade. This is linked to the large influx of refugees coming from Jordan's neighbouring countries, in particular since the Syrian civil war started in 2011. Amman's current estimated population reaches 4 million inhabitants, representing 42% of Jordan's total population[1]. Estimates suggest that over 1 million of them are of Syrian origin. Figure 1 below illustrates the increase in population in Amman and in the Greater Amman Municipality (GAM) since 2002. Participants stressed that it is likely that refugees or illegal immigrants in Amman are not fully accounted for in the Census and real population numbers could be higher.

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[1]Population Data for Jordan: http://census.dos.gov.jo/
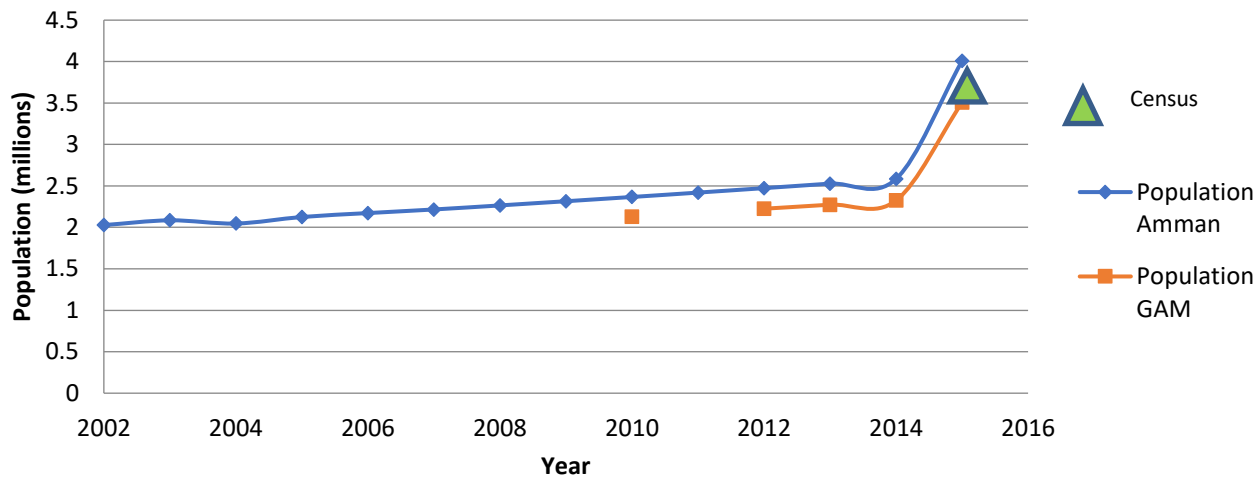
Population of Amman

Figure 1 Evolution Population Amman since 2002. Source: Department of Statistics

Rapid increase in private motorised vehicles

Over the past ten years the number of private motorised vehicles has increased dramatically in Amman as population and GDP has risen. The 2008 household survey undertaken in Amman estimated that 726,000 people had a driving license, of which 73% were men and 27% women. Based on the latest census data, the estimated rate of increase in car per person is 8.3%. Data from 2008 indicate that the city of Amman already had 33% of car use in the city. Participants highlighted that this percentage is likely to be higher by now and that the percentage of public transport use is likely to have gone down.

As mentioned by a participant, "*a lot of people now have more than one car per household, even if they are not economically well-off*". The percentage of household's income ear-marked to purchase, maintain and use private vehicles is very high; "*people will spend all their time and money on buying a car*". The demand and dependence on car use has led to severe congestion and parking issues in Jordan's capital city. As highlighted by a participant, the city's streets are becoming "*a giant car park*".
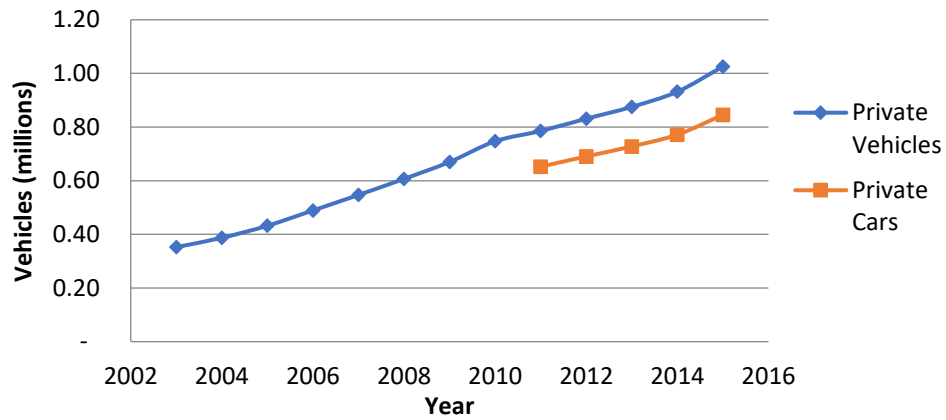
Private Vehicles/ Cars Registered in Amman

Figure 2 Private vehicles registered in Amman since 2002 (including cars, trucks, vans and pick-ups). Source: DoS (department of statistic), MoT (ministry of transport) and DVLD (driver& vehicle licensing department)
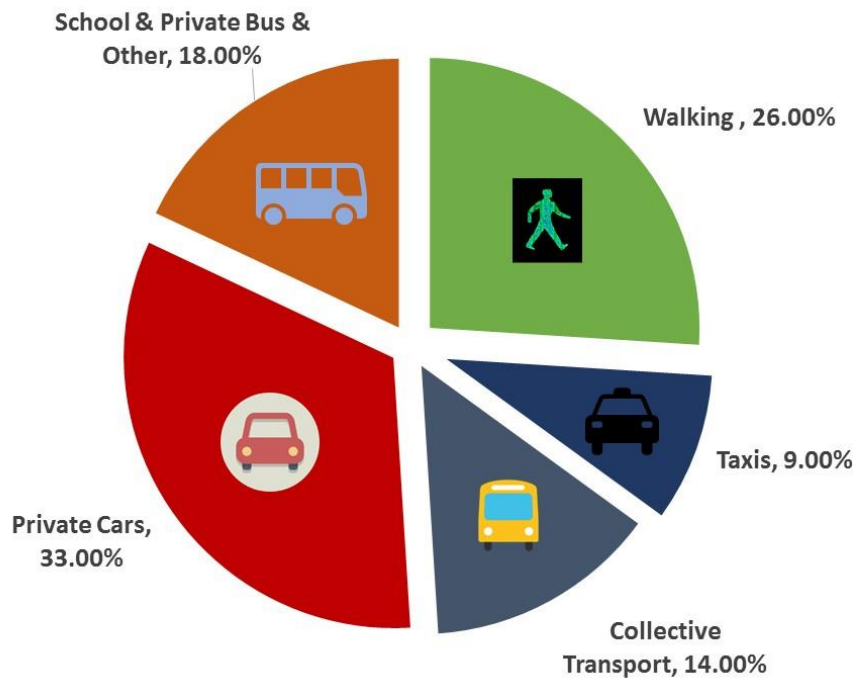
Modal Share in Amman in 2008

Figure 3 Modal Share in Amman in 2008. Source: Amman Transport mobility master plan

Amman GDP per capita has been growing

Amman's GDP per capita has been gradually growing since the 2000s. An increasing number of residents are now able to purchase and use a private motorised vehicle.
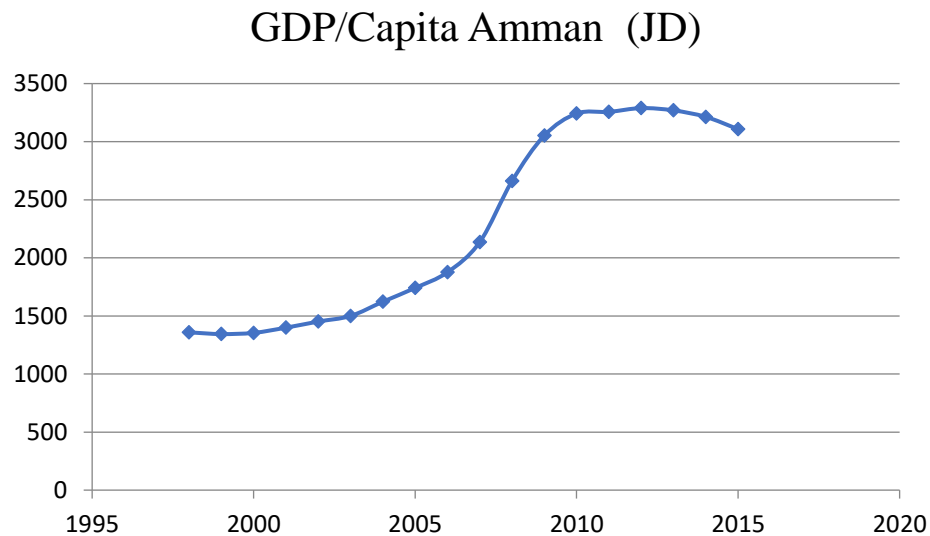
GDP/Capita Amman (JD)

Figure 4 Evolution of GDP per capita in Amman since 1995 in Jordanian Dinar. Source: Ministry of Energy and Mineral Resources

Amman's topography& climate represent an obstacle

Participants mentioned that one of the reasons that explains the lack of public transport infrastructures in Amman is the fact that the city is built on mountains. As stressed by a participant: "*The topographic nature of Amman is one of the main obstacles*". The hilliness of the city restricts, or complicates, the construction of certain transport infrastructures. Climatic conditions in Amman are also considered as an obstacle to mobility in the city. Due to the semi-arid nature of the climate, high temperatures and heatwaves are relatively common. Amman's topography and climate can deter inhabitants from walking or cycling, as mentioned by certain participants.

Figure 5 'Amman's Citadel atop Jabal al-Qal'a, the historical center of the city' Source: David Bjorgen (https://en.wikipedia.org/wiki/Amman_Citadel#/media/File:Amman_Citadel.jpg)

Cultural Changes have contributed to increased car use

Over the past ten years an increasing number of women have joined the workforce in Amman adding to the number of daily commuters. This change could be explained by the fact that "*now women are very happy to come to work and to study*". As summarised by participants, "*the mobility and the opportunities have changed so much for women",* now women "*want to have their children but they also want their freedom*" and "*all the women want a car*". If given a choice, women tend to prefer individual mobility versus collective mobility for safety and cultural reasons. One of the negative outcomes of this change in lifestyle, is that a growing number of women use a private motorized vehicle.

Amman has a very young population as estimates indicate that over 50% is under the age of 25 years old. As described by a participant: "*This generation sees owning a car as the ultimate goal*", and as more important than owning a house. This is likely to create "*an explosion in demand in the future*".

How did public authorities respond to changes in urban transport and land-use in Amman?

Governance changes: towards increased decentralization and democratization in Amman

In 2006, a new mayor was elected in Amman. As described by a participant this mayor was "*forward thinking"* and his objective was *"to change the focus from infrastructure (bridges or roads) to other*

transport policy issues". During his term, the mayor successfully reformed transport administration in Jordan. In 2007 the institutional and administrative powers linked to transport policy were transferred from the national level to the local level in Amman. The local authority acquired increased independence to put in place transport policy and projects. From that moment, "*the thinking started to change*" and the local authority started to plan PT projects.

Despite those recent changes, the system remains highly centralised. Amman's local authority has a degree of financial independence but the national government needs to be consulted for any large-scale project. Local authorities are not always consulted when major decisions are taken. As stated by a participant "*it takes a long time to change the mindset*".

In parallel, demands for further democracy have been growing in Amman since the start of the Arab Spring[2] in 2010. According to some participants it affected negatively the establishment process of the Bus Rapid Transit (BRT) in Amman in 2014. "*Democracy in this country has worked against transport in the city*" as stressed by a participant, "*there was a lot of pressure from Parliament, the Deputes and the public*" to drop the project as it was going to disrupt traffic flow. Despite numerous attempts to convince stakeholders that the BRT was necessary in Amman, plans were suspended for three years; "*the pressure from the people after the Arab Spring was too strong*".

However, a new law was adopted at the national level in 2017 which is likely to foster the implementation of PT. The 'passenger transport law' institutionalizes PT subsidies and allow the establishment of a fund to subsidise public transport. This law encourages and "*opens the doors for local authorities to take control over PT*" and contributes to increased decentralisation. Though this law is currently 'frozen' at the national level for no specific reason.

Lack of public transport

Population increase over the last decade has not been accompanied by public investments in public transport (PT). As stressed by a participant, "*public transport has declined slightly whilst the population has increased dramatically*" and the quality of PT service '*is worsening*'. This situation was described by some participants as being 'catastrophic'. Automobile manufacturers even advertise their product by comparing "*a happy person in a car with a sad person in a bus*". The main problem is the fleet size of buses in Amman; a participant estimates that the number of buses per 10000 inhabitants is around 2.5 (see estimated number of collective vehicles operating in Amman in Table 1). There are other issues too, especially regulatory, but also problems with the design of the bus routes that does not match demand. In Amman, "*The car is a necessity, because there is no public transport*" or "*the existing public transport is very poor*", summarised participants.

The lack of accessibility to public transport services is particularly visible in the 'new residential areas' of Amman where medium and low-income households live. These areas, recently built on the outskirts of the city, are not served by collective transport and do not have commercial activities. In those areas, the reliance on a car is an 'absolute necessity', "*whether people are wealthy or not*" even to go and "*buy*

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[2]Waves of demonstrations in the Middle East that began at the end of 2010

bread". New development areas in Amman have not been accompanied by the establishment of public transport facilities.

Public Transport Mode	Vehicles	Capacity	Routes
Large bus	471	45	81
Minibus	202	23	69
Shared taxi	3007	4	84

Table 1 Number of collective vehicles operating in Amman. Source: Greater Amman Authority

One of the cultural and institutional issues related to public transport in Amman is that until recently, collective transport was perceived by public authorities as a commercial activity and not as a public service. The collective transport sector is run by private minibus owners and does not receive public subsidies. On the other hand, a participant noted that public authorities are building a "*vast road network and are providing free public parking space*" for car users. As stressed by a participant, by doing so "*the government is subsidizing private transport",* but limited subsidies are available for public transport.

Two additional factors explain the difficulty in putting in place public transport projects in Amman. On the one hand, the fact that roads tend to be narrow leaving limited space for new public transport facilities (such as Bus Rapid Transit corridors) as the road capacity is at maximum. On the other hand, there are numerous political issues linked to existing minibuses operators who are reluctant to give away the 'ownership' of certain routes or corridors and who view them as "a right for life". Restructuring the network to integrate new public transport facilities "takes a lot of political power that might result in social unrest" stressed a participant.

Participants noticed that over the past three or four years the demand for further public transport has been increasing. One of the factors that can explain this change is that local inhabitants realise that "*using their car costs too much money*" and that there are too many cars on the roads. This recognition was echoed at the national level as Jordan's King has also been calling for improvements in the public transport system of Amman and has been putting pressure on the national government.

Figure 6 Collective Transport – Minibuses in Amman. Source: Nisreen Tarawneh

In 2015, a local Non-Governmental Organisation (NGO)- Maan Nasel - took the initiative to design a map and an app of collective transport in Amman. The project, called Khutoutuna – translated as "Our lines" - initiated a map of the 90 bus routes used by large buses (coasters) and mini-buses in the city of Amman (as illustrated in figure 7 below).
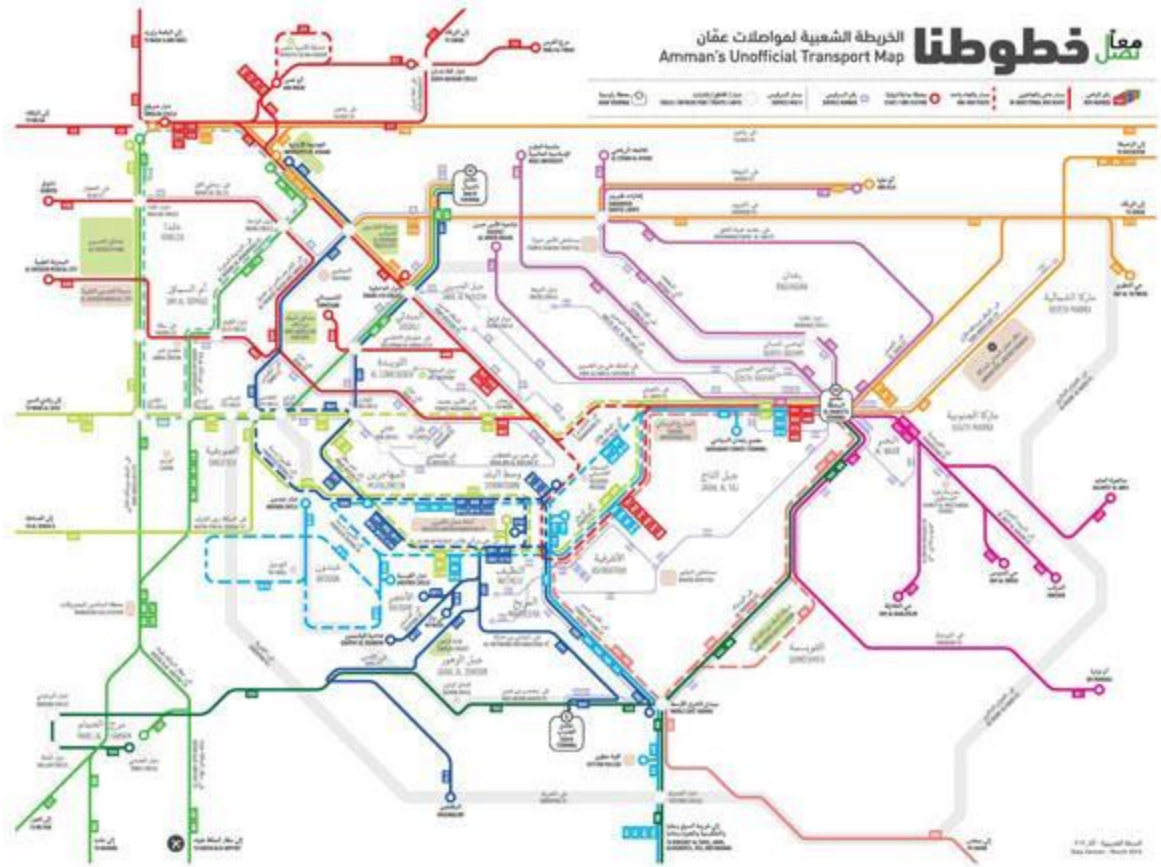
Figure 7 Map of collective transport in Amman, Khutoutuna, made by NGO MaanNasel

Urban planning issues: no land-use and transport strategy

The lack of comprehensive urban planning strategy was highlighted by several participants. Until the 2010s urban planning was not given importance in Amman, commented a participant. The city of Amman does not have a *comprehensive* urban plan, its 2009 Urban Plan and its 2010 Transport Master plan are limited in scope, lack evidence, and do not comprise a consultation process. Furthermore, the two plans (transport and land-use) are not coordinated. "*There is a lack of coordination between land-use planning and transport planning*", stressed a participant. Participants highlighted that this is beginning to change and that over the past five years planners and transport experts have been working towards integrated plans, but it is not yet taken "sufficiently seriously" and there is no "action plan".

The lack of integrated planning strategy and the unrestricted urban sprawl was highlighted several times during the focus group. For instance, the establishment of commercial centres is not accompanied by a transport strategy leading to unplanned traffic. Amman's expansion towards the West and North-West has not been accompanied by transport planning policies or even proper planning policies. Planning permits are given to wealthy citizens to build low density houses in new residential areas in the West of the city. Those areas do not include access to basic facilities. Residents rely on their cars to access their property

and the facilities located in the city centre of Amman. In general, planning policies make it complicated for public authorities to control development projects in privately own land.

Certain participants highlighted the fact that the concentration of most of Amman's commercial activities in the city center is problematic. Most High Streets and employment areas and other key services are located in few central 'zones' generating a large number of trips per inhabitant. The same participant recommends incentivizing the creation of new 'city centers' in Amman leading to a more Polycentric city to spread movement of people.

Planning policies have not adapted to the extreme demographic changes

The extreme demographic changes Amman has been facing were not met by adequate planning policies, according to several participants. As described by a participant, "*The sudden rise in need for immediate facilities, including wate, transport and housing*" was not taken into account by Amman's policies. Amman's urban plans and urban planning policies have not been suitably updated since 2008. The city has new demographic realities and they are not reflected in the urban plans.

What aggravates the problem is that the majority of the land is privately owned and that public authorities lack funding to buy land from private owners. Consequently, public authorities find it difficult to find the necessary space to establish public transport facilities.

Allocation of resources focused towards 'planning for vehicles'

Several factors might explain why, until now, the focus has been primarily towards planning for private vehicle use in Jordan. First, participants explained that most of the transport investments in Jordan come from 'foreign countries', either international financial institutions or neighboring countries (e.g. Saudi Arabia). So far, these institutions' focus has been almost exclusively on building highway infrastructure. As mentioned by a participant "*transport planning is more driven by these things than by an assessment of what the city needs*".

One participant mentioned that underground or over ground tunnels "*like in European countries*" would ease road traffic congestion and should be built providing the city receives adequate financial support. He added that experience from European countries suggests that investments in tunnels and bridges should be put in place: "*We have the experience from other European countries but we have not the money to do the same*".

Other factors explain why investments have been primarily focused on highway infrastructure in Amman. On one hand, political representatives tend to favor road or bridge building as an easy way to achieve political recognition. As stated by a participant, "*Every Mayor wants to show an achievement*" and building a road is an "*easy way*" to do so and there is little consideration for what experts have to say. On the other hand, obtaining financial support to invest in highway infrastructure – for instance via neighbouring countries such as Saudi Arabia - has been relatively easy.

Figure 8 Congestion Amman. Source: Nisreen Tarawneh

Figure 9 Amman's Abdoun Bridge, photographed from the en:4th Circle. April 2008. Source: Ldud at English Wikipedia

Incentives to buy a car and decrease in fuel cost

In Amman, it is relatively easy to purchase a private motorised vehicles. Banks provide easy access to loans; interest rates are relatively low. However, the license fee is very expensive. Furthermore, fuel prices have been going down over the past decade, as illustrated in Figure 10 below.
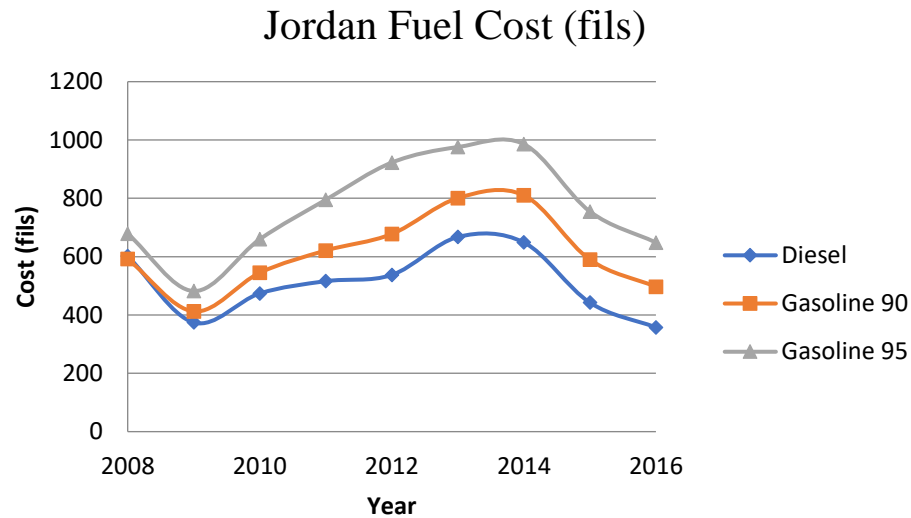
Jordan Fuel Cost (fils)

Figure 10 Evolution of Fuel cost in Jordan (1 Jordanian Dinar equals 1000 fils). Source: www.jopetrol.com.jo

Defining the present

The second part of the focus group raised questions related to the present situation in Amman. Participants were first asked '*What are the biggest challenges for urban transport and mobility in Amman?*' Then they were requested to describe *current policy priorities for urban transport in Amman*. Finally, participants were asked '*What influences transport policies in Amman?* for example, regional, national or supranational influences or demands coming from local citizens such as lobby groups or the press, etc.

What are the biggest challenges for urban transport and mobility in Amman?

Strong car dependency partly explained by the lack of alternatives

One of the biggest challenges in Amman is people's extreme reliance on private motorised vehicles to move through the city, which generates severe congestion. This dependence is partly explained by cultural factors, but, it is also aggravated by the fact that public transport services are so poor. As described by a participant, it is an "intimidating environment" with no information for users and a lack of integration between the different services. It is common for users to have to take two or three different buses to reach their destination. Given that payment systems are not harmonized, the user must pay for each bus trip. As pointed out by one participant "*it becomes cheaper to take a taxi*".

Pedestrian and cycling facilities are also lacking in Amman. The 'environment' for pedestrians is 'unsafe', stressed some participants. There are limited bus stops in the city, the sidewalks are "hard to use", "paved with obstacles", and crossing facilities for pedestrians are non-existent or insufficient. Generally, Amman's roads were described as unsafe for pedestrians, especially for vulnerable road users (e.g.

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disabled or senior). This discourages inhabitants from using the public transport system, since "*a good public transportation service needs to be supported by a good pedestrian environment*" (as illustrated in figure 11 below). The city does not have cycling facilities and there are very few cyclists in Amman.

A participant summarised the situation by stating: "*Making alternatives forms of mobility viable* is not a *priority*". Consequently "*Everything pushes people to use cars*" and that leads to congestion.

Another element that explains why car dependency is so strong in Amman is the fact that having a car is a symbol of prestige and success in Jordan. The majority of the residents in Amman aspire to own a vehicle not solely for practical reasons but also for social reasons.
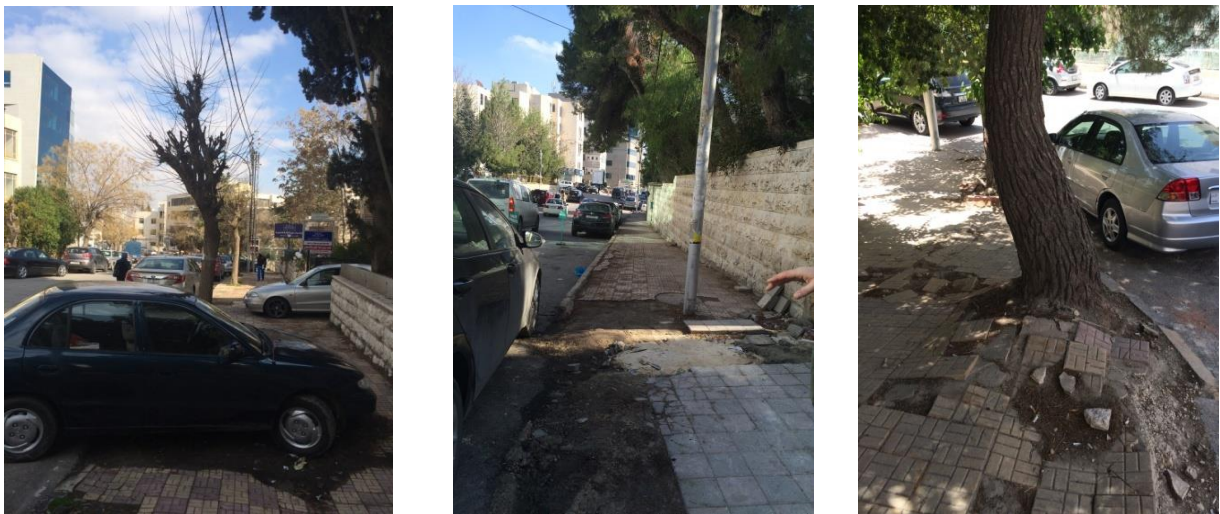

Figure 11 Illegal Parking in Amman. Source: Nisreen Tarawneh

Horizontal expansion of the city & lack of integration between transport and planning

Three key planning issues were highlighted by participants. Firstly, the fact that current planning regulations in Jordan contribute to the horizontal expansion of the city. According to a participant in "90% of Amman" the maximum height for new building construction is four storeys. Second, the lack of integration between transport and land-use planning, as highlighted by a participant "*development comes first*" generating unsustainable travel patterns. Third, the fact that Amman's urban plans have not been adapted to reflect new demographic changes.

Public authorities lack control over collective transport operators

All buses in Jordan are privately run, mostly by individuals. Each operator receives a permit issued by the local authority allowing it to operate on certain routes. The price of the bus ticket is fixed by the local authority (30 cents by ticket). Even though drivers operate on fixed routes, the service offered is flexible

and mostly demand-driven. As a result, bus drivers do not follow fixed schedules and do not automatically stop at the same stops. There are no formal bus stops or road markings.

Figure 12 Minibus Amman. Source: Nisreen Tarawneh

Amman's local authority has little control over the private collective transport sector, whether it is large bus, minibus or taxi operators. The fact that buses and taxis are run by separate individuals makes it difficult for the local authority to engage with the sector. Participants pointed out that the sector is largely unregulated and that "*It is hard to regulate them*". Bus owners, who own the right to operate on certain routes, lobby to maintain control over their routes making it complicated for public transport projects, such as the BRT, to be established. To address these issues a participant stressed that "*The government should deal with them in a tough way*".

Figure 13 White shared taxi parked next to Yellow taxi in Amman. Source: Nisreen Tarawneh

A new law which was passed in 2017 in Amman makes it compulsory for individual operators to merge within five years or to sell their lines to the municipality. But participants expressed concerns that within five years the situation might change.   As stressed by a participant: "*Five years is too long as we might have political change before then*". The establishment of a new partnership with the private sector is a "long process".

Enforcement

The lack of enforcement for parking and traffic rules is problematic in Amman. Illegal parking, speeding and other traffic issues are recurrent and remain largely unaddressed by the police. This is due to the fact that enforcement authorities – the traffic police - are managed by the security department at the national level. The lack of communication and co-operation between the national and the local level relating to enforcement issues was highlighted by most participants. It is also very problematic with minibus and taxi drivers who tend not to respect speed and traffic rules. As stressed by a participant: "*in order to reduce the chaos, people should start following the rules a bit more*". Traffic cameras could help the enforcement process.

Figure 14 Illegal parking in Amman. Source: Cavoli, C.

Lack of expertise

Amman's local authority lacks the capacity to manage public transport policies. There are very few employees who have the expertise to implement policies related to public transport or transport planning. The majority of the employees who work for Amman's transport department are in charge of traffic related issues.

Lack of data

There is a lack of data in Amman. The data available is not up-to-date and might not reflect the present traffic situation. It is difficult to convince politicians as, "*Numbers are missing*".

What are the current policy priorities for urban transport in the city?

Current policy priorities and allocation of funding

Amman's local authority has two key priorities related to public transport. On the one hand it plans to invest in 100 new large buses designed for public transport. Those buses will belong to a public company but will be operated by a private company. On the other hand, the local authority is collaborating with the French Development Agency (AFD) to establish a BRT.

There is no plan to increase road capacity because the local authority has limited control over the land. Chinese investors have expressed an interest in investing in metro lines in Amman but it is not confirmed. A feasibility study is underway which might take up to two years.

Transport administration in Amman

Greater Amman Municipality (GAM) is responsible for an area of 800 km^2, covering 22 districts in figure 15 below. The historic center is Madeinah and this with the six districts surrounding it, is considered to constitute the center of Amman.

Figure 15 GAM's 22 administrative districts

GAM's *Transportation and Traffic management Directorate* is divided into three departments:

1. The Traffic Operations Department
2. The Transportation and Traffic Planning Department
3. The Public Transportation Operations Department
4. BRT department
5. Transportation and Traffic management Directorate

Transport outside GAM is the responsibility of the Ministry of Transport and the LTRC (the Land Transport Regulatory Commission). LTRC is responsible for all public transport trips which do not run

entirely within GAM. Public transport within GAM is operated by private operators under the authority of GAM.

Decision-making related to budget allocation for transport is the responsibility of Amman's Mayor. However, the national government needs to authorize large-scale projects or major change in the legislation.

What influences transport policies in the city?

National Level

The pressure form the National level is very strong in Amman due to the centralised nature of political institutions in Jordan. As explained by a participant: "*The problem is that at the national level, mobility in general has not been a priority for years, usually the priority is the refugee crisis, water supply, foreign investment or unemployment*". However, recently the government has shown an interest to mobility issues.

Shaping the future

During the last part of the focus group participants discussed the future of mobility in Amman. Participants were first asked '*What are the future challenges the city is likely to face in the coming years*' for example, demographic changes. Finally, the discussion focused on potential innovative policies that could accelerate sustainable mobility in Amman.

What are the future challenges Amman is likely to face in the coming years?

Demand for car use is likely to increase

One of the most pressing challenges is the fact that the demand for car ownership and car use is likely to increase. This is linked to three factors. First, economic growth is associated with an increase in car ownership and car use levels. Second, increased urban migration and population growth is likely to continue over the coming decades, and Amman's population could double by 2030, as illustrated in figure 16 below. Amman remains an economic hub for the country and the region and a "*city of opportunity*". Third, Amman has a very high percentage of citizens under 18 years old (see figure 17 below). According to a participant "*the majority to the population does not currently own a car*". As Amman's young population becomes legally able to drive, and because most of them "dream of having a car", car use and car ownership levels could increase sharply.
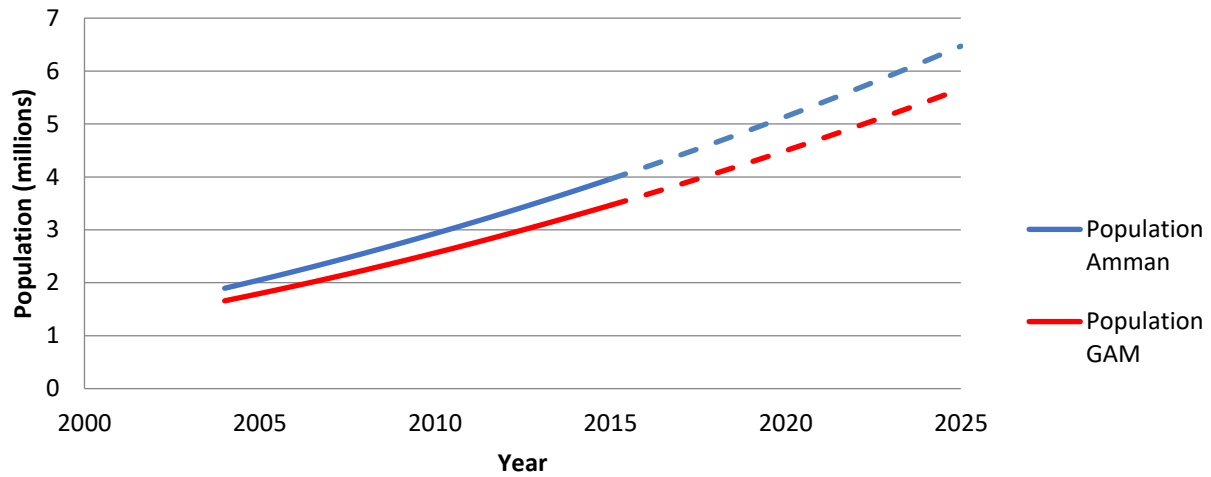
Predicted Population Growth in Amman

Figure 16 Predicted Population Growth in Amman. Source: 2008 Amman Plan
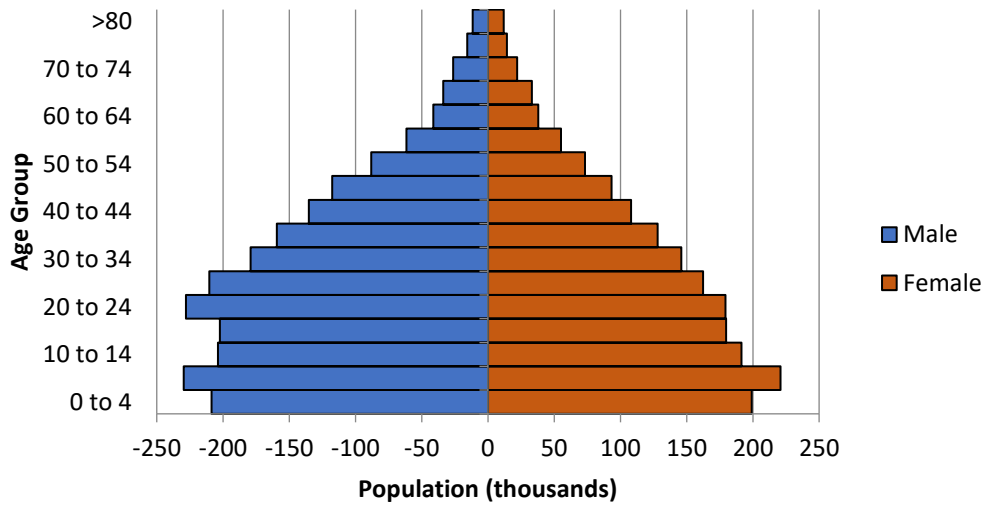
Population pyramid for Amman in 2015

Figure 17 Population Pyramid for Amman in 2015. Source: (department of statistics)

Continued Urban Sprawl

Urban Sprawl is likely to increase because current regulations prevent the construction of high buildings. This will in turn generate unsustainable travel patterns.

Lack of trust between the local government and the citizens

City officials mentioned that it is very "*hard to convince the media and local inhabitants that the local authority has the interest of the people at heart*". Local residents blame the Greater Amman Authority (GAM) for the traffic issues in the city. As highlighted by a participant "*The local authority are the most hated people in the world*". To address this problem GAM should improve its communication with the public.

Future opportunities in Amman

E-services

> E-services are growing and present an opportunity to reduce the need to move in the city. Administrative procedures for inhabitants in Amman remain very bureaucratic. A large number of trips are necessary to reach specific public institutions. It should be possible to reduce this by implementing e-governance services. This could decrease the number of trips and has the potential to improve congestion. GAM's objective is to become a paperless municipality by the end of 2018.

Vertical expansion

> The city has an opportunity to start growing vertically by changing planning laws. This would allow for a denser city with reduced need for long journeys and increased accessibility to key services.

Behaviour change

> One of the biggest challenges for mobility in Amman is related to cultural issues. As summarised by a participant "*We should create a culture of mobility*"; "*There is a need to convince people that public transport is good for them*". It is key to target captive audiences. In Amman the largest captive audience is the students. T*here is a need to give them a good experience using public transport which demonstrates its ease and convenience.*" There is an opportunity to foster behavioural change within Amman's younger population. As mentioned by a participant: "*The new generation is ambitious and think differently*". There seems to be a rising demand, in particular coming from young people, for improved mobility facilities, such as sidewalks and

public transport. "*If the facilities are available and are sufficiently good, people will shift easily*" commented a participant.

Congestion

➢ As highlighted by a participant: "*Traffic congestion is an opportunity to change transport in Amman*", "*It is an opportunity to send the right message to the people*". The city of Amman has limited road capacity and it needs to be accepted by public authorities and the public.

Public/Private Partnership

➢ To overcome current financial challenges, public authorities should start partnering with private partners. One participant suggested that parking management could be handled by a private company if the law is changed.

Stakeholders' consultation

➢ Consultation with a range of stakeholders is needed. Decision-makers should include various stakeholders in the decision-making process to improve policies. A participant suggested creating a transport committee involving a range of different stakeholders representing experts and the society.

Teleworking

➢ As Wifi and 3G and 4G connections are of very good quality in Amman, working from home represents an opportunity to reduce the need to commute. A minority of people have started working from home. GAM now allows its employees to work from home but it remains rare.

E-Hailing

➢ E-Hailing companies have entered the market in Amman. UBER now operates in Amman and so does its middle Eastern rival Careem, headquartered in Dubai. These services are not "*completely legal*" yet they are now widely used. A participant stated: "*This might not be politically correct, but I think that UBER and Careem are wonderful and make more sense than having taxis endlessly circulating throughout the city*". They also contribute to improved accessibility in some areas which are not well-served by conventional taxis. E-hailing companies, that can take more than one client at a time (e.g. UBER pool), do not yet exist in Amman. However, noted participants, there are unformal, and illegal, practices where private drivers (e.g. minibuses) give lifts to students because school buses are very expensive. "*The government closes its eyes* [to this practice] *because there is a need for this*", as explained, however it is not safe and should be regulated. This happens because of the "*deficiency in the public transport system*".

Autonomous Vehicles

➢ One participant mentioned that shared autonomous vehicles might represent an opportunity to improve traffic problems in Amman. As stated: "*When they get unveiled 10 years from now we need to think how to integrate them into the city, especially if they are shared*".

ITS innovation for public transport

➢ ITS innovation is much needed to improve the current bus system in Amman. For instance, GPS data from large buses could be linked to an app so that users can track their bus. Google map has become increasingly popular for car drivers as it provides real time information about traffic.

Collaboration with Universities

➢ Collaboration with Universities provide an opportunity to improve policy-making. Amman's local authority lacks data and the University could be a fantastic data provider, contributing to policy-making. University students could collect data as part of their graduation project.

Which innovative policies could accelerate sustainable mobility in your city?

Incentive system for sustainable mobility

➢ Public authorities could establish incentive systems to encourage people to use sustainable modes of transportation. For instance, companies could reward employees who car-pool with other colleagues or subsidise people who use public transportat or cycles. The government could give those companies a tax break to encourage this practice.

Use city as a laboratory

➢ Participants mentioned that the city should be used as a laboratory to test policies or projects in certain areas. There is a need to show inhabitants that the changes proposed will be effective to ensure acceptability. Universities are a good place to test innovative policies or unpopular ideas as the resistance is likely to be less strong.

Target captive audiences

➢ Policy-makers should focus on targeting inhabitants who do not drive a car, such as students, and encourage them to use different modes of transport. This could help prevent them from becoming car users in the future.

Improve Public Transport's reliability

➢ One of the priorities as far as public transport is concerned is to improve PT's reliability. This could start by establishing strict schedules. As mentioned: "*people are ready to use buses more if their bus is reliable*".

Topic Guide Focus Group

Understanding the past

1. How has urban transport evolved over the past 10 to 15 years? (for example, linked to societal and cultural changes, mobility demand, demographics…)
    a. How about land use?

2. How have urban transport policies evolved over the past 10 to 15 years?
    a. How about land use and planning policies?
    b. To what extent have those changes been affected by policies or legislation at the national or supranational level (for example changes at the EU level)?

Defining the present

1. What are the biggest challenges for urban transport and mobility in your city?
    a. What are biggest challenges at a policy level?
    b. What are the biggest political challenges?

2. What are the current policy priorities for urban transport in the city?
    a. What are the challenges in delivering those priorities?

3. What influences transport policies in the city? (for example, regional, national or supranational influences or demands coming from local citizens such as lobby groups or the press, or competition with other cities…)

Shaping the future

1. What are the future challenges the city is likely to face in the coming years (for example, demographic changes…)
    a. And the future opportunities?

2. What is the overall strategy for future urban transport policy in the city?

3. To what extent can technological developments help solve urban transport problems in your city?

4. Which innovative policies could accelerate sustainable mobility in your city?

Introduction:

The topic guide below has been compiled to provide the CREATE project basic data about your city. We would like you to complete the questionnaire below by collecting/gathering information about your city. The data should be **official public data** as far as possible. However, we understand that at times it might be difficult to find the relevant data within your organisation. Even though we would recommend that you not provide unofficial data, if you do provide unofficial data (for example online data from Wikipedia) please make an explicit reference in the document.

Your city's administrative structure

- Could you please define the boundary of your city's administration?
  - When we talk about transport in your city, which territory are we talking about? (e.g. city centre, metropolitan area, other?)
  - Could you provide surface of land use area (km2) data, an indicative map, and/or any other useful indicators.

Demography

- How many inhabitants does your city have?
- Do you have historic data about the total number of inhabitants in your city (throughout the past decade or two)?
- Do you have predicted population growth?

Transport institutions

- Which entities are responsible for transport policies and operations in your city? (e.g. which department within your local authority? Any national entities? Any private transport operators?)

Transport Demand and Car Ownership

- What is the modal share/split (% of trips per average workday) in your city?
- Do you have historic data recording the evolution of modal share?
- Could you provide information about the development of the number of private cars (car ownership levels) and the number of driving licences per inhabitants (city-wide)
- Do you have predictions related to future transport demand in your city?

Economy

- Could you provide data about the development of GDP (Gross Domestic Product) per capita in your city (over the years)?

- Could you provide current and historic data about the development of annual average fuel prices (diesel and petrol) distinguished between net values and taxes [€ per litre]

Local transport plan

- Does your city have a local transport plan and/or business plan or any other equivalent policy-making document? If so, do you have an English version?

Additional data

- Do you have additional data which would be relevant to establish an initial city profile?

Thank you very much for your collaboration. We would be grateful if you could complete and complement the questionnaire in the coming weeks. We need as much information as possible before the mid-term review report to be submitted to the EU Commission at the end of the year. Early next year we will ask you to gather further qualitative and quantitative information about urban transport and transport policy in your city.