A thesis submitted to the Department of Environmental Sciences and Policy of Central European University in part fulfilment of the Degree of Master of Science

Urban transport in the absence of a single transport policy, and the context of sustainable development. The case of Baku

Anar MEHDIYEV

July, 2021

Vienna

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Anar MEHDIYEV

THE CENTRAL EUROPEAN UNIVERSITY

ABSTRACT OF THESIS

submitted by: Anar MEHDIYEV

for the degree of Master of Science and entitled:

Urban transport in the absence of a single transport policy, and the context of sustainable development. The case of Baku

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Urban transport planning has been underdeveloped in Azerbaijan for decades since the country's independence. Any developments in the sector until recently have been unsystematic and often counterproductive, creating more problems than they tried to solve. This was and is still partially true for Baku, the capital city.

The current research looked into the state of the urban transport planning in Azerbaijan, using the example of Baku. The situation started changing in the last decade, along with the plans of Government to develop Baku into a regional cultural and tourist hub. For that, they would need to improve transport system within the country's overall sustainability commitments. Azerbaijan is still at the early stages of merging the ideas of sustainability with its transport planning practices. Current ambitions in Baku are to take urban transport further, providing mobility and equity while preserving the environment.

As the research showed, there is a lack of expertise in transport planning resulting in poor decisions. The administrative structure is bulky and chaotic; it lacks institutional capacity and motivation. Nevertheless, the progress in urban transport planning is obvious: establishment of the Baku Transport Agency in 2015 has already made transport safer and passenger-friendlier.

The research produced SWOT analysis of the factors shaping Baku urban transport system. Based on the outcomes and conclusions, recommendations have been made on possible actions to strengthen the planning system and performance of urban transport. These include adoption of national transport strategy, creation of a regional transport authority, and expansion of rail-based public transport.

Keywords: urban transport, policy, sustainability, Azerbaijan, Baku.

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Abbreviations

BNA	Baku Transport Agency
GDP	Gross Domestic Product
LLC	Limited Liability Company
MoT	Ministry of Transport, Communications and High Technologies
SCUPA	State Committee for Urban Planning and Architecture
SDG	Sustainable Development Goal
SPPRED	State Programme on Poverty Reduction and Economic Development
SPPRSD	State Programme on Poverty Reduction and Sustainable Development
SRTS	State Road Transport Service
SWOT	Strengths, Weaknesses, Opportunities and Threats
TSDS	Transport Sector Development Strategy
UN	United Nations
VAT	Value added tax

1. Introduction

As part of the overall sustainability agenda, transport plays a significant role in providing mobility, social equity, accessibility, and healthy lifestyle for its users. It is impossible to imagine a modern city without a well-designed and efficient urban transport system that would create a backbone for its economic, social, and cultural life, while taking care of the environment. It is therefore imperative that an urban transport system is designed based on the principles of sustainability, i.e. taking into account all the aspects of it, rather than concentrating on one or two that seem to be the priority at a given point in time (Rodrigue, 2020). For example, it would be unwise to plan transport development from the point of view of affordability, leaving environmental considerations out of the equation since the most affordable economic options are not necessarily the most environmentally friendly. Thus electric cars might be cheaper to run with subsidies and in favourable tax regime compared to conventional fuel cars, but the issue of rare earth elements required for production of their batteries, raised by a number of experts world-wide, has not been addressed yet (Natural History Museum, 2019). Similarly, one can easily imagine that concentrating on catering for the social needs of the population and prioritizing the environmental protection at all costs can very quickly lead to the total collapse of the system that has not been left a chance to try and outbalance its priorities (Rodrigue, 2020).

Sustainable urban transport planning requires therefore a wide range of skills and knowledge, and can only be achieved through co-operation between all the stakeholders of the process. Its success depends on the very intricate balance between economic, environmental, and social equity considerations shared by all the parties to the process. It is often not enough to take the overarching country sustainable development strategy

(if a country has one) and/or the list of its sustainable development goals (SDGs) and make sure the relevant sustainability statements and measures appear in transport planning at any level, from the country-wide transport strategy to urban transport development plans. Ensuring sustainability considerations are at the core of any development, including for transport, involves carefully addressing all the aspects of sustainability while weighing them against each other, and also developing a rigorous system of monitoring of the results and adjusting the actions based on the outcomes of this monitoring (US EPA, 2011). This is why it is so important to make sure maximum stakeholder involvement in urban transport planning, as this is perhaps the best way to make sure as many facets of urban transport development are going to be shaped with the interest of all stakeholder groups at heart.

Azerbaijan's relatively recent commitment to including sustainability considerations into all aspects of its economic life has started gradually finding its way to strategic planning and sector management (Valiyev, pers.comm.). Naturally, one of the major sectors what requires close attention in this regard is the transport sector, and particularly urban transport. It is best shown on the example of the city of Baku, the capital of the country with a population of almost 3 million, which for a long time suffered from the almost total lack of any transport planning (ITF, 2020). As a result, levels of congestion, air quality, mobility, accessibility, and practically all the aspects of urban transport have been neglected and let deteriorate to the extremes which, by the 2010s became impossible to ignore any further (ITF, 2020). Once prosperous city with an extensive network of buses, trams, metro and trolley-buses, it has become a stone jungle with most streets constantly blocked by uncontrolled traffic (see Figure 1). The absence of the driving culture, as witnessed by all the inhabitants on a daily basis, has

also contributed hugely to the situation, which required radical changes to the way urban transport planning was approached by those whose responsibility it was.

Figure 1. Typical view of a congested street in Baku

Source: https://1news.az/news/20210419095252351

The following chapters will look into the interaction between sustainability issues and transport planning in general, as well as the state of transport planning and particularly urban transport planning in Azerbaijan. Driving forces of such planning will be discussed, and conclusions and recommendations will be made regarding ways to improve the situation and allow better integration of sustainability considerations into urban transport planning in the country.

1.1 Aims and objectives

The **aim** of the current research is to determine the effect of the absence of a single transport policy on sustainability of urban transport based on the case of the city of Baku.

This aim will be achieved through fulfilling the following **objectives**:

Objective 1: To establish the socio-economic and political baseline for urban transport system development in Azerbaijan.

Objective 2: To analyse the relevant system of transport planning and the levels of integration of sustainability considerations into it.

Objective 3: To draw conclusions on the current state and development of the urban transport system of Baku, and to produce recommendations on the ways to achieve sustainable urban transportation.

1.2 Analytical framework

The **analytical framework** for the present study was developed based on the number of circumstances revealed during the review of the relevant research literature. Thus, it has become evident that, while being at the core of urban development, transport has remained largely under-regulated in the country, including the capital city of Baku. This made any attempt to compare the existing international guidance or any past or existing urban transport strategies to the national documents.

It is also clear that, although the Azerbaijani Government has been demonstrating their intention to consider SDGs in various aspects of the country's life, transport has not been paid sufficient attention in the sustainability agenda.

The analytical framework for the current research suggests that simply introducing international standards at various levels of national planning in an attempt to satisfy the sustainability requirements might not be the most beneficial or indeed, feasible way to take sustainability into account at various levels of the urban transport planning process. It might make more sense to first consolidate such planning efforts in the hands of one central organisation that would then delegate sub-sector tasks to various other bodies and co-ordinate their efforts, receive feedback and update/adjust the existing transport strategies accordingly.

On the other hand, introducing sustainability to the planning process at national or sub-national levels, however desirable, requires certain degree of understanding and acceptance of the issue by all stakeholders, as well as their combined willingness and capacity to tackle it. At present, although Azerbaijan's economic development received a huge boost from the oil revenues since the beginning of the 21st century, the country seems to still be struggling with the idea of having sustainability considerations embedded in various branches of the economy, as well as with the definition of sustainability per se. The latter comes as no surprise considering that the definition of sustainable development has remained the subject of heated debates ever since it has been brought to international attention in 1987 by the Brundtland Commission of the United Nations (Brundtland, 1987).

2. Literature review

2.1 Urban transport development and the world population growth

Transport is one of the most important elements of our civilisation, its level of development being closely related to the overall level of socio-economic advancement of the society (EBRD, 2019). It is therefore not surprising that the transport infrastructure is often referred to as 'basic arteries of the economy', highlighting the crucial role of this particular sector of the economy in ensuring economic progress and social prosperity. However, such a central role of the transport sector brings with it certain challenges, not in the least due to the population growth rates, which saw the world population doubling in the last 50 years (see Figure **2** below).

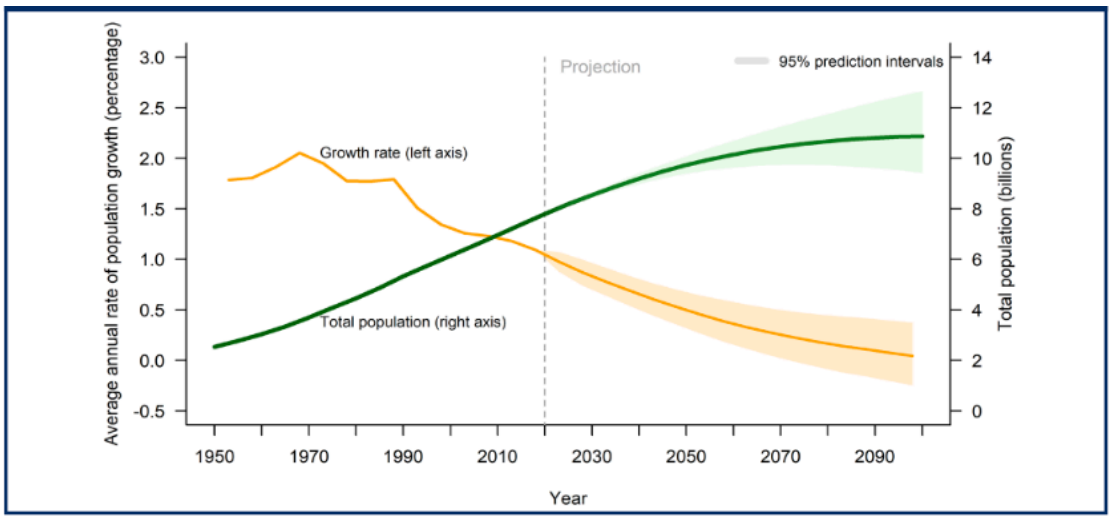


Figure 2. Population size and annual growth rate for the world: estimates 1950-2020, and medium-variant projection with 95% prediction intervals, 2020-2100.

Source: UN, 2019a.

Although the rate at which the global population increases annually has been gradually slowing down since the late 1960s, it is still projected to reach 10 billion by mid-21st century (UN, 2019a, b). The existing demographic trend presents certain challenges for the transport sector, which has been rapidly expanding to cater for the

growing population. Thus, according to the first ever Global Mobility Report 2017 (SMA, 2017), the volumes of passenger traffic are expected to increase by 50% between 2015 and 2030 if the current transport development trends persist. The amount of cars on the road is also predicted to double within the same period of time.

These trends have affected all branches of the transport sector, from passenger transport to moving cargo around the world, from land-based types of transportation to air and water ones, and from rural transport networks to complex urban systems. The current thesis focuses on the prospects of development of urban transport as potentially the most affected by the general demographic and economic trends (SMA, 2017). This is primarily due to the fact that by 2010, cities occupied, according to different estimates, between 0.6% and 3% of the landmass (Liu et al., 2014, Ritchie and Roser, 2019), but accommodated over a half of the global population, and are responsible for nearly 60 per cent of the world resource consumption and 70 per cent of global carbon emissions around the same time (UN, 2015).

According to projections, urban population is expected to keep growing in the foreseeable future, with the urban-rural economic, social and cultural gap worryingly widening even further in countries with pronounced economic inequalities between the two regions (Kastrop *et al.*, 2019, OECD, 2018). This will keep increasing the pressure on the urban areas to support their growing population's demands for opportunities, labour, goods and services, connectivity and general wellbeing.

Undoubtedly, the world economy is facing a certain challenge of accommodating growth within the limitations of the urban space and available resources. It is not surprising then that the issue of transport development has been closely linked to the goals of sustainable development set by the United Nations (UN) in its 2030 Agenda

for Sustainable Development and adopted by its member states back in 2015 (UN, 2015).

2.2 Transport and the 2030 Agenda for Sustainable Development

Designed as an action plan and a guiding document for all the governments, businesses and public at large, the 2030 Agenda for Sustainable Development provided the framework for shaping the development of all the sectors of the economy, as well as many aspects of the life of societies, across the continents. While none of the 17 sustainable development goals, or Sustainable Development Goals (SDGs), introduced in the document are directly related to transport, its ***Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable*** comes closest to promoting urban liveability. In particular, its Target 11.2 ensures the inclusion of transport systems as part of the efforts to improve sustainability:

"By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons" (UN, 2015, p26).

All these can realistically be achieved only if transport development in cities is systematically planned and regulated, and the greater the gap between the present and the desirable state of a transport system, the more intense planning efforts are required to achieve the latter (Thondoo, 2020). There is no one recipe for urban transport planning which should be done in the most holistic manner possible, taking into account all aspects of sustainability, economic trends and targets, as well as social inclusion, health and well-being of citizens. In this regard it seems justifiable to utilise two

concepts which might be better suited for achieving not only effective and efficient, environmentally conscious and socially inclusive transport systems, but also ones that take into account less quantifiable, but often more valuable to stakeholders aspects of their lives.

The first of such concepts is the one of ***urban liveability***, which emerged in response to the urge to not simply take into account the straightforward environmental and social indicators when considering a sustainable approach to urban development, but to view them inseparable from human health and wellbeing (Alderton et al., 2019). The concept of urban liveability reflects the need to keep people's needs and expectations in balance with the cities' environment, both natural and man-made (Kovacs-Gyori, 2019). It is no wonder, therefore, that all aspects of this notion connect with each other via, and function within, the one key element that ensures their smooth and harmonious integration into the urban fabric, that is, *mobility* (Rodrigue, 2020). Mobility is crucial when it comes to ensuring accessibility for people, businesses, and organisations to goods and services, work and leisure, and should therefore receive adequate attention in urban planning. It is essential if we want to improve quality of life, ensure access to opportunities, promote creativity and personal wellbeing, and eventually build healthy and prosperous communities (FMECD, 2016).

However, incorporating liveability into urban and transport planning remains a challenge, as singling out one, however prominent, problem and dealing with it does not necessarily mean sufficient improvement in other aspects of the issue. For instance, Nieuwenhuijsen (2020) states that energy transition to renewable sources can reduce street noise and air pollution, but does not address the problems of green areas, public spaces and physical inactivity, which are important factors when looking at the connection between the urban transport and quality of life of the inhabitants. The author

summarizes that policies, which combine removal of motorised transportation, greening the cities, and land-use change, can eventually lead to more liveable and healthier cities.

One example of such holistic approach is the city of Vienna, whose transport plan, adopted in 1970s, made it a showcase for liveability – through limiting car access, promotion of walking, cycling and public transport, and proving that building wider roads and large junctions to overcome congestion is essentially counter-productive (Knoflacher, 2007). The author also reflects on certain policy failures. For example, construction of a Vienna motorway in 1978 to enhance bypass of the central area meant increased accidents as a result of higher speeds. New shopping centres on the city outskirts induced bankruptcy of shops in central areas, and longer travels for the residents. System analysis that followed the implementation of the policy proved that building wider roads and large junctions to overcome congestion was essentially counter-productive. Knoflacher, therefore, recommends controlling the demand for cars by regulators and society, to prevent longer trips and raise the value of life at a local scale. Efforts to make Budapest more liveable have found their reflection in the recommendations to improve the transport system in the city, which looked not only at the most commonly adopted solutions, but also at the outcomes of their implementation (Levegő Munkacsoport, 2020). The authors took into account the experience of other cities and, based on those and on the specifics of the city life, and produced a number of suggestions that put people, i.e. individual citizens, at their heart.

The second concept utilised by this research is the one of '***just sustainabilities***', introduced by Agyeman and colleagues in the early 2000s (2003). The idea of just sustainabilities is rooted in the fact that, while sustainability is about meeting the needs of the current generations without compromising those of the future ones (Brundtland,

1987), it rarely accommodates for social justice and fails to view nature as anything other than a resource (Agyeman, 2013). It also stresses the fact that there can be no one recipe for achieving sustainability, and each society needs to find its own way that would acknowledge and embrace the uniqueness of its circumstances (Agyeman *et al.*, 2003). The authors specify four conditions that, in their opinion, while completely interconnected with each other, comprise an essential part of any efforts to achieve such just sustainabilities. These are namely:

- improving people's well-being and quality of life;
- achieving both intra- and inter-generational equity;
- justice and equity in providing opportunities and fulfilling individual's capabilities; and
- living within the limits of the ecosystem.

It is not difficult to see that these conditions imply a high degree of co-operation and sufficient levels of co-ordination between all stakeholders in the process of developing sustainable transport policies. Unfortunately, this is not always the case. Thus, Badami et al. (2004) found that transport policy in Indian cities is car-oriented and does not consider the non-driving majority. According to Thondoo and colleagues (2020), in Mauritius, urban planners may project their own visions onto the whole population, and thus build policy objectives satisfying only them. To further research the misalignment in modern transport projects, the authors performed an evaluation of society needs of residents of Port Louis, the capital of Mauritius, analysing the needs against the actual policy focus areas. The outcome was that urban policy did not service society's aspiration towards having green and liveable neighbourhoods with pedestrianized streets. The research team noted that planners had a bias towards creating hard infrastructure, investing into roads and 'prestige' projects, rather than making small-scale investments. The authors concluded that with such a focus on

economic development, the urban policy misses the health and social benefits of transport and environment.

Another major obstacle for developing transport policies that would be capable of focusing on sustainability and equity issues is the lack of institutional capacity. In developing countries, regulators often do not have experienced personnel to develop and implement transport policies, which results in selection of inadequate investment priorities (Runji 2015). For example, in his review of African transport policies, Runji particularly emphasizes that lack of feedback, weak monitoring and post-project evaluation prevents the issue of inadequate capability for correcting the transport policy from being highlighted and addressed.

The latter is an important observation, since human health and well-being, inter- and intra-generation equity, and social cohesion are, after all, an intrinsic part of the sustainability vision (UN, 2012). Most importantly, such approach takes the person out of the equation thus rendering citizens' needs and aspirations unimportant and depriving them of the opportunity to influence the decision-making process that shapes the liveability of their own cities. The attempts to shape the efforts to achieve sustainability chiefly around economic and environmental issues often fall short of achieving social equity 'now', for today's generations – the phenomenon described as "equity-deficit environmentalism" (Agyeman, 2008). Sustainability policy, whether a comprehensive one or sector-specific (such as sustainable transport policy), therefore ought to truly embrace all aspects of human life and well-being if it claims to be aiming at building healthy, just and lasting economies for generations to come.

2.3 Specifics of the development of Azerbaijan's transport system

Historically, Azerbaijan's unique geographic location between Asia and Europe has shaped its international image as economic and social bridge between the two regions. Since the 19th century, oil, for which the country has been known since 4th century A.D., started playing an increasingly important part in its economy (SOCAR, 2017). In 1901, Azerbaijan's share of world oil production reached 50 per cent, but declined between 1950s and 1990s, almost coming to a halt by 1994 caused by the economic collapse, sharp decline in investments, and the Nagorno-Karabakh conflict with the neighbouring Armenia (Ciarreta and Nasirov, 2011).

Figure 3. Map of Azerbaijan

Source: https://en.wikipedia.org/wiki/Azerbaijan

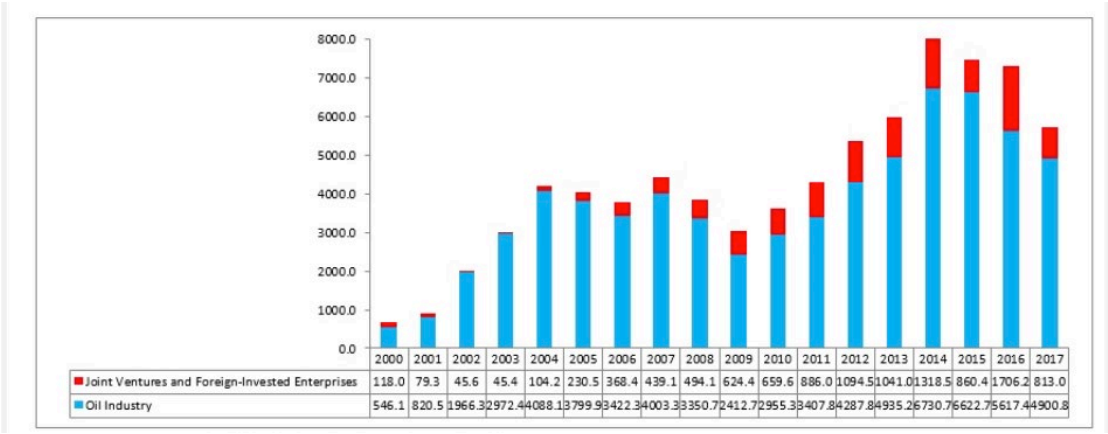
Note: Highlighted in light green is an area under Russian peacekeepers as of 2021.

In the following decades, economic development of the country was rather uneven. The war over Nagorno-Karabakh not only had direct economic and social

consequences for the country that lost 20 per cent of its territory, but also resulted in nearly a million refugees and internally displaced people migrating from the conflict zone and primarily into the capital city of Baku (Cornell, 1997). The ceasefire agreement achieved with Armenia in 1994 finally allowed the country to concentrate on developing its vast oil and gas reserves, leading to the economic boom that lasted well into 2010s and increasing Azerbaijan's Gross Domestic Product (GDP) ten-fold (Trading Economics, 2020).

Vast oil revenues helped alleviate the overall poverty levels from 50 per cent in 2000 to just 5 per cent in 2014, via the implementation of two State Poverty Reduction programmes based on the Millennium Development Goals agenda (Scholz, 2017). As a result, according to the United Nations Development Programme (UNDP) classification, Azerbaijan soon progressed to become one of the countries with high Human Development Index – a set of economic, environmental, health, and social used by UNDP to measure the overall estate of development of societies (UNDP, 2020).

At the same time, the disproportionate development of the oil and gas sector at the expense of almost all other sectors of the economy did not go without consequences for Azerbaijan's economic development. Since 2000, the vast majority of foreign investments have been aimed at further developing the oil and gas sector of the country (Figure 4 below). As a result, by the second decade of the 21st century, its economy was showing all the signs of the 'Dutch disease', and the crash of the world oil prices of 2014 resulted in a huge throwback for Azerbaijan's economic development and signs of stagnation (see Figure 5).



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Joint Ventures and Foreign-Invested Enterprises	118.0	79.3	45.6	45.4	104.2	230.5	368.4	439.1	494.1	624.4	659.6	886.0	1094.5	1041.0	1318.5	860.4	1706.2	813.0
Oil Industry	546.1	820.5	1966.3	2972.4	4088.1	3799.9	3422.3	4003.3	3350.7	2412.7	2955.3	3407.8	4287.8	4935.2	6730.7	6622.7	5617.4	4900.8

Figure 4. Dynamics of Oil and Non-Oil Foreign Direct Investment (in Millions of USD)
Source: Mehtiyev, 2018, based on data from the State Statistical Committee of the Republic of Azerbaijan.

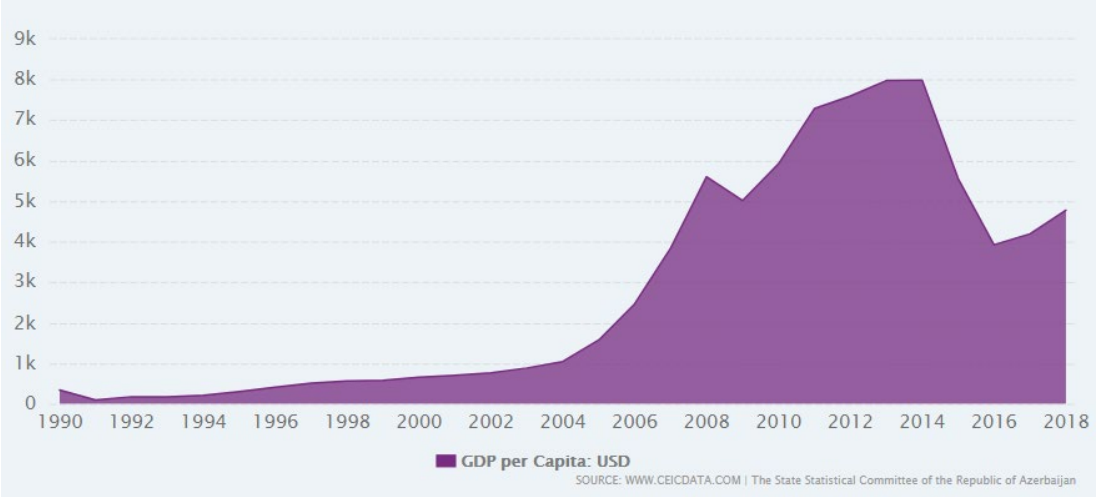


Figure 5. GDP per capita in Azerbaijan, 1990-2018

Source: www.Ceicdata.com based on Azerbaijan State Statistical Committee

All these pressures have had their reflection in the state of the country's transport sector, which became one of the fastest growing branches of the country's economy. This growth was encouraged by, among others, foreign investments that started gradually flowing into various sectors of Azerbaijan's economy in the second decade of the 21st century, as can be seen from Figure 4. Between 2013 and 2018, while the

overall growth of the Azerbaijani economy averaged 1.6 per cent, the transport sector grew on average by 7 per cent (ITF, 2020) (see Figure 6 below).

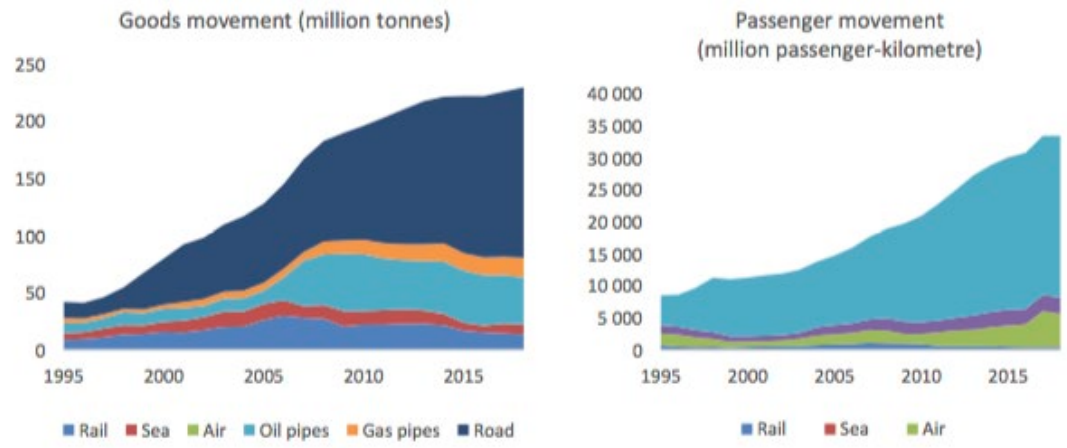


Figure 6. Movements in Azerbaijan for goods (million tonnes) and passengers (million passenger-kilometres), 1995-2015. Source: ITF, 2020.

In an attempt to follow international experience in developing a viable transport sector, the Government included improvement of road infrastructure into its three-year State Programme on Poverty Reduction and Economic Development (SPPRED) adopted in 2003 for 2003-2005 (MoED, 2003). The programme included primarily improvements to the highway infrastructure and to air quality monitoring, but also highlighted a number of issues within the transport sector, such as pollution, financial difficulties, the lack of the transport infrastructure, particularly in rural areas, and the insufficient regulatory basis.

Coupled with the increase in transportation of goods and passengers, are CO_2 emissions on the road. According to the International Energy Agency, transport sector is the largest source of air pollution (85 per cent) in Azerbaijan, with road traffic being

the prevalent contributor to these emissions (IEA, 2020). Of these, CO_2 emissions make the transport sector the second largest polluter in the country (see Figure 7 below).

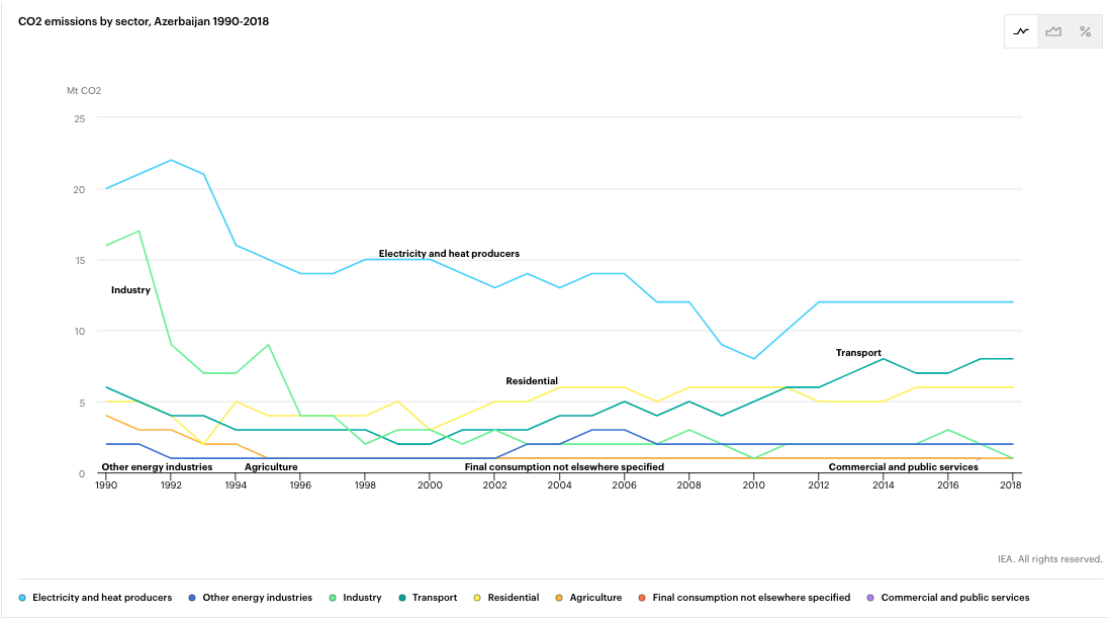


Figure 7. CO_2 emissions by sector, Azerbaijan, 1990-2018

Source: www.iea.org.

Expansion of transport sector in the last two decades resulted in three-fold increase in oil-based fuel consumption (IEA, 2021). The rise of the transport to the largest oil consumer in the 21st century is described by Figure **8**. CO_2 emitter, is driven by tripling of oil consumption

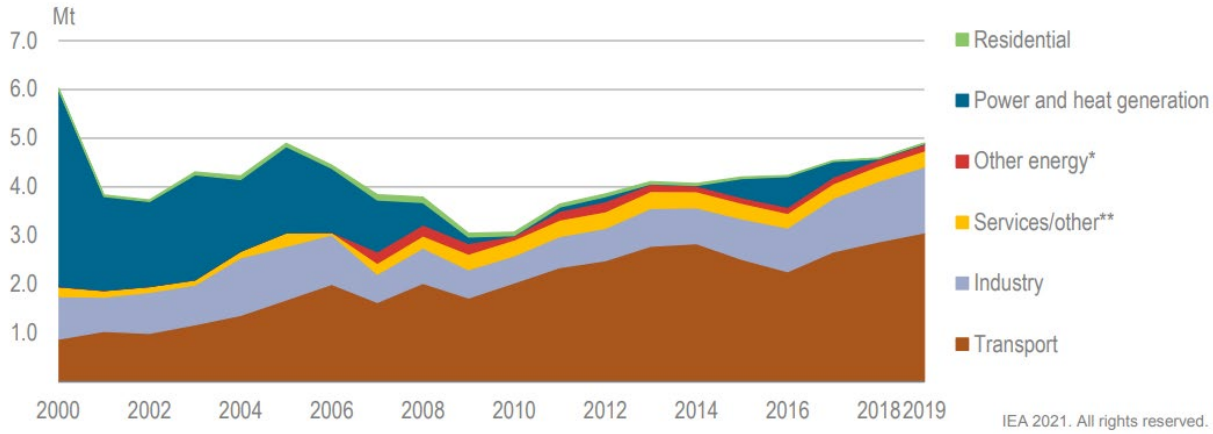


Figure 8. Oil supply by sector, 2000-19. Source: IEA 2021

The 2008-2015 State Programme on Poverty Reduction and Sustainable Development (SPPRSD), that replaced the SPPRED in 2008, did not focus specifically on many aspects of transport development as part of the sustainability agenda, possibly due to the lack of coverage of transport issues by the SDGs. The main transport-specific points raised in the document were related to air pollution 61 per cent of which is emitted by motor vehicles the nearly 2.5-times increase in the number of registered cars between 1995 and 2007, the ageing car fleet, the lack of enforcement of regulations, poor servicing of cars, and fuel quality (MoED, 2008).

Simultaneously, a Technical Assistance document was produced by Asian Development Bank for Transport Sector Development Strategy (TSDS) for 2006-2015, concentrating specifically on the issues related to the development of the transport sector in Azerbaijan (ADB, 2005). The strategy acknowledged, among others, the need to identify "the long-term development needs, policy reforms, and regulatory requirements that are in line with the Government's envisaged development goals" and to improve the then Ministry of Transport capacity (p. 4). Unfortunately, no post-implementation data on the Strategy was available for the analysis during the work on the current dissertation.

More recently, a number of development programmes were adopted for the 5-year period starting in 2019. Among them, the State Program of Azerbaijan Republic on Road Safety for 2019-2023, developed by the Ministry of Transport, Communications and Transport Technologies (MoT) of the Republic of Azerbaijan to set the direction and goals for improving transport safety in the country. This goal is to be achieved via developing a smart transport management system based on the international experience, and ensuring its efficiency particularly in the city of Baku,

with its gradual extension to include the highways of national importance (MoT, 2018). The Programme also envisages introduction and further development of eco-efficient vehicles, creating the necessary infrastructure for electric cars, and creating bicycle and express bus lanes.

The 2019-2023 State Programme for Socio-Economic Development mentions the transport sector as one of the fastest developing in the country (MoED, 2018). However, transport sector needs received only marginal attention in the Programme, having been narrowed down to, primarily, construction of new, and reconstruction and maintenance of the existing, inter- and intra-regional roads, as well as some of those connecting Baku and its periphery. According to the Trend News Agency, development of a unified transport strategy is currently being discussed with sector leaders across all transport agencies of the country. Such strategy would allow for better co-ordination between all the sectors, as well as for their harmonious integration into the development strategy of the country (Trend News Agency, 2021).

So far, Azerbaijan's performance on SDGs has been ranked 54th out of 166 countries covered by the latest Sustainable Development Report 2020 (Sachs et al., 2020) (see Figure 9). All these actions indicate the understanding by the Azerbaijani Government of the importance of having a well-developed, inclusive and sustainable transport system, as well as their commitment to developing such a system. Nevertheless, the Government is yet to demonstrate its commitment to the development of the transport sector that would help achieve a state close to Agyeman's vision of 'just sustainability' for the country, rather than simply improve performance on a given set of indicators.

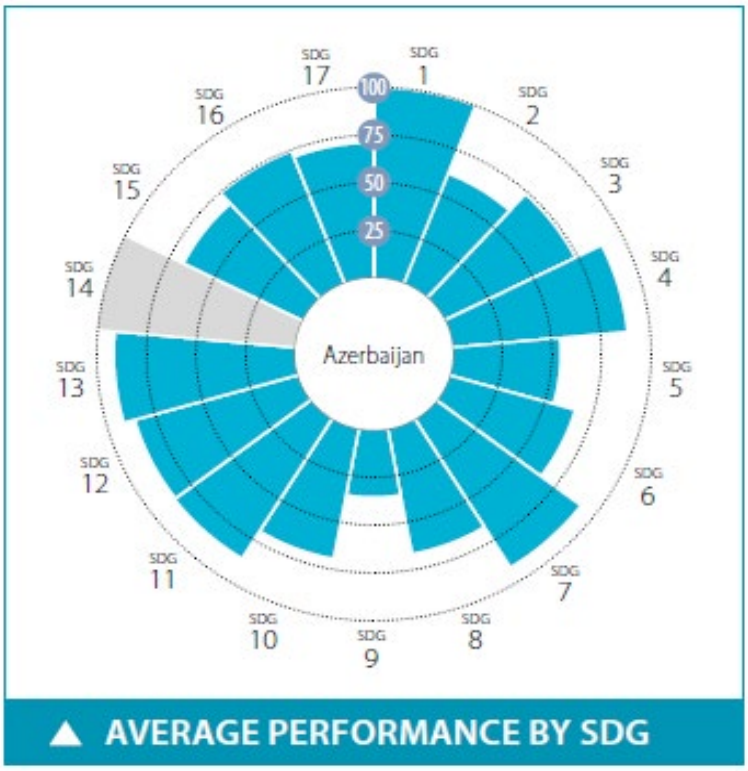


Figure 9. Azerbaijan's average performance by Sustainable Development Goals

Source: Sachs et al., 2020

2.4 Baku city transport system in the context of sustainable development

As the capital city of Azerbaijan, Baku has always been leading on development and innovation. This is true for, inter alia, the transport sector which is crucial for the city and its suburbs forming an agglomeration whose population has doubled in the last 30 years as a result of the war with Armenia and the rapid growth of the oil and gas sector between 2000 and 2015, and is estimated to reach nearly four million by 2030 (ITF, 2020, World Bank, 2018).

With over 50 per cent of the country's population living in urban areas, mainly in the capital city of Baku (23 per cent), urban transport is a crucial factor in Azerbaijan's

economic development, having been growing by 5 per cent annually between 2009-2018 (ITF, 2020). Urban road transport, as well as the vast majority of public buses, is privately owned (ADB, 2005). Economic and political changes that have been taking place in the country since its independence have lead to the dramatic increase of car ownership from less than 30 vehicles per 1000 population in 1995 to 119 vehicles per 1000 population by 2018 (ITF, 2020). At the time of designing the 2006-2015 TSDS, vehicles were mostly outdated and therefore inefficient and causing high pollution levels. 26 per cent of the population of Baku used underground metro, which, similarly to the rest of the transport fleet, including the railways, was underperforming due to insufficient financing, planning and maintenance (ADB, 2005).

Increasing population and density, particularly in the city centre, sprawling suburbs and the rapid motorisation happening within such a short period of time created an immense pressure on the urban transport system, which was not ready for these new demands. The main focus of urban transport improvements envisaged by the 2006-2015 TSDS was on large road infrastructure developments to accommodate and speed up road traffic (ADB, 2005). Since around 2010, the government's actions have been concentrating on improving public transportation. This included rehabilitation of selected suburban railways, significant orders of large-capacity buses, and institutional changes, which altogether have lead to a better service quality of the public transport system (ADB, 2005).

Unfortunately, the progress has slowed down considerably with the global crash of the oil prices in 2014 (see Figure 10 below), leading to a fall in amount of investments and a growing gap between the initially adopted plans and their actual implementation rate (OECD, 2019), as shown on Figure 10.

Figure 10. Global crude oil prices 2000-2020, US dollars per barrel.

Source: Bloomberg 2020.

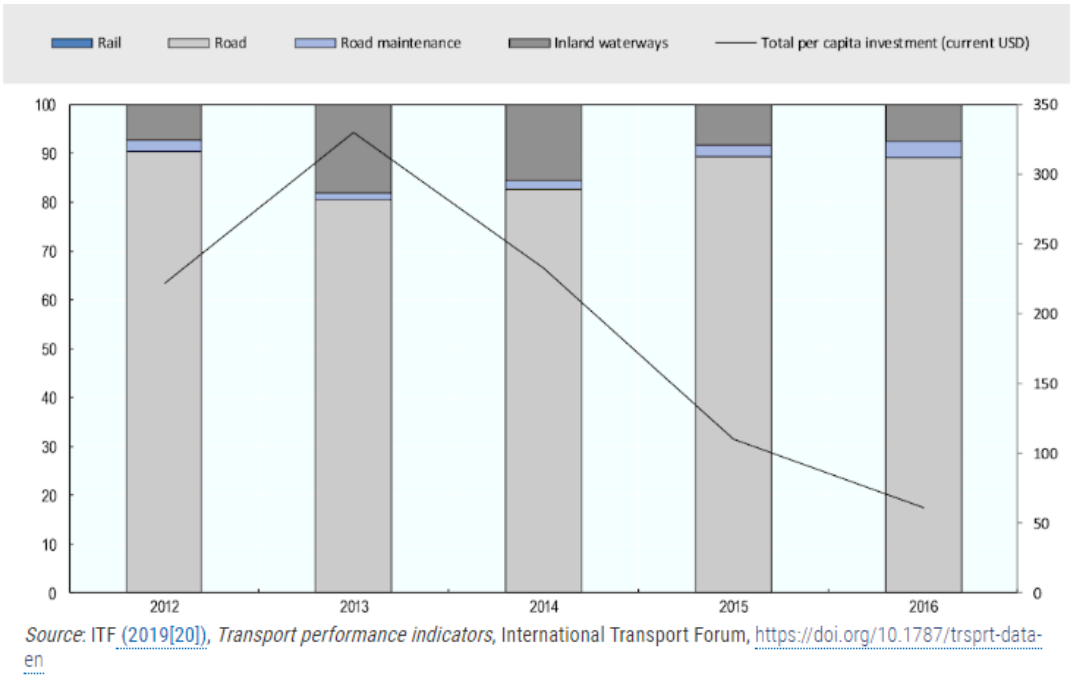


Figure 10. Modal share of inland infrastructure investment (left axis) and transport infrastructure investment in current USD per capita (right axis)

Source: https://www.oecd-ilibrary.org/

Despite the continuous attempts of the Government to improve transport sector's performance, many of the problems, that have characterised Azerbaijan's transport system since the country's independence, still persist. This is particularly true for the

city of Baku. An Urban Mobility Policy Notice prepared for Baku by the World Bank team in 2018 made an attempt at a comprehensive review of the current state and developmental needs of the Baku urban transport system (World Bank, 2018). The document highlighted a number of issues with many aspects of the system, such as the underdeveloped institutional framework, insufficient financing, the need for better bus, metro, suburban rail, and taxi services, as well as poor traffic management and safety record, and the lack of inclusiveness. In addition, the report stressed that, due to the sharp increase of the population and, subsequently, private vehicle ownership, in the city, its air quality has been steadily declining due to the low quality fuel, outdated vehicle engine standards, and the lack of infrastructure for electric vehicles preventing wider acceptance of the latter. At the same time, the document fails to reflect in further detail on the importance of taking into account citizens' wider needs in shaping the future of the Baku's mobility and ensuring economic, environmental, social and health equity. This seems to be a common problem with similar policies and programmes which build their actions and recommendations around the environment, the economy, and/or the society as a whole and ignore the individual needs and aspirations of the citizens (see, e.g. Radchenko, 2020).

A comprehensive transport system that would consider as many different aspects of people's lives, the environment and the economy, as possible and feasible, would inevitably increase liveability of Baku. However, as in the rest of the country, there are certain factors influencing the transport system's development in Baku and possibly slowing the progress in the sector development. Often these factors have their roots in Azerbaijan's Soviet past, e.g. high levels of corruption, which, according to Corruption Perception Index 2020, place it 29th out of 180 countries included in the report (Transparency International, 2021). Institutional capacity-related factors, such as high

levels of bureaucracy, the lack of financial and regulatory mechanisms and experience in developing and implementing strategic-level activities have also been slowing Azerbaijan's progress since its independence (Ciarreta and Nasirov, 2010; World Bank and IFC, 2014; WEF, 2015; Lauinger et al., 2016).

In an interview a prominent transport lawyer, Arshad Huseynov, named a number of such issues. Among these are the lack of strategic planning, architectural solutions, enforcing the traffic rules, and diversity of urban transport (Huseynov, pers.comm.). The density of the city's population increased dramatically since the country's independence in 1991, but this increase was not followed by a respective adjustment of public transport, which has lead to a sharp increase in private vehicles still observed today. As a result, traffic conditions in Baku have been far from perfect, and the inhabitants have been suffering from ever decreasing mobility.

As the literature review carried out for the research showed, there is currently no unified single authority that would bring all the transport-related issues under its remit, produce comprehensive transport sector policy documents that would integrate all aspects of transport development and operation and would be followed by respective transport development action plans or programmes. It seems only logical that, similarly to the case of Klang Valley, Malaysia (Ariffin and Zahari, 2013), the existing system of multiple disconnected bodies, responsible for various aspects of transport, cannot cater for the sustainable development goals that the country has committed to. This creates a certain difficulty in monitoring transport-related performance indicators and adjusting the existing policies accordingly and in real time, as there seems to be no clear feedback mechanism within the existing system.

3. Methodology

The research approach took into account the aims and objectives of the current study and included methods that would best reflect the qualitative nature of the research, which tried to understand the issue in its social and historical context, as well as the experiences and opinions of its various stakeholders, and generate a theoretical basis for the way forward (Creswell, 2014, Whitehead, 2016). As is common with the qualitative research (Bryman, 2007), the current research used the inductive approach to first explore the available data on the topic and, based on the outcomes, develop a theory and to validate it via the subsequent stages. The methods employed during the research were thus chosen with the view of enabling the descriptive and analytical nature of the study (Collis and Hussey, 2014). These included, among others, interviews as a primary research method, and review of the available literature and regulations as secondary research methods (see, e.g., Creswell, 1998, and Hammersley, 2000). Finally, the findings of the research were brought together under the Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis (Ghazinoory and Azadegan-Mehr, 2011), which helped draw conclusions and recommendations on the ways to improve urban transport planning and achieve sustainability in the sector in Azerbaijan.

3.1. Review of the relevant literature

The current research relied on review of the relevant literature as one of the triangulation methods which allowed for obtaining and cross-validating information for the study (Yin, 1994). Ranging from the aspects of transport systems and sustainability, and their role in urbanization from the global level, to the national to the local level, this method provided the baseline for the study and the necessary links between its

components. It also supplied a helpful insight into some international experiences as well as that of Azerbaijan and particularly the city of Baku, and therefore helped to highlight the potential information gaps and uncertainties, and shaped the next steps of the research.

The literature for the study was obtained using a number of available resources, such as electronic libraries, newspaper articles, websites of various national and international organisations, businesses and non-governmental organisations, internet search engines, as well, as direct requests to the relevant institutions.

3.2. Review of the available policy documents and regulations

For the purpose of the study, a number of relevant policy documents were sought which served a number of purposes. Thus, as explained by Bowen (2009), they helped to establish the context and the framework within which urban transport has been developing in Azerbaijan as a whole, and in Baku in particular. They were also used at a later stage of the research to verify information gathered at the review of the literature stage, as well as during the interviews with various stakeholders, as is done in, for instance, sociological studies (Angrosino & Mays de Pérez, 2000). Documents can also serve as a useful tool to track change and as such, can serve as a basis for shaping interviews and recommendations (Bowen, 2009).

Obtaining relevant documents for the research was impeded by the country's historical lack of transparency at a strategic policy level, as well as by the underdevelopment of transport planning practices which are still in their infancy in Azerbaijan. The documents that were available to the research included:

- 2003-2005 State Programme on Poverty Reduction and Economic Development (SPPRED) (MoED, 2003);

- 2008-2015 State Programme on Poverty Reduction and Sustainable Development (SPPRSD) (MoED, 2008);
- 2006-2016 Transport Sector Development Strategy (TSDS);
- 2019-2023 State Programme of Azerbaijan Republic on Road Safety (MoT, 2018);
- 2019-2023 State Programme for Socio-Economic Development (MoE, 2018);
- Urban Mobility Policy Notice prepared for the City of Baku (World Bank, 2018);

3.3. Interviews with stakeholders

Interviews with stakeholders were used as the primary method of collecting information for the research. As put by Seidman (2006), "At the root of in-depth interviewing is an interest in understanding the lived experience of other people and the meaning they make of that experience" (p.9). Thus interviews not only seek to obtain information that is missing from other sources, such as research literature and documentation. It can be expected that they provide an in-depth insight into the experiences of various stakeholders and by doing so, complete the triangulation process and enable the researcher to draw valid conclusions and realistic recommendations.

In order to avoid potential bias, several groups of stakeholders involved in various aspects of transport development were identified, namely, state agencies, NGOs, private companies, as well as general public. For the purpose of the interviews, only the first three groups of stakeholders were selected, and within each, two to four potential candidates were identified based on their positions, professional experience, involvement with the issues brought up in the study, and availability.

The interviews were designed primarily as semi-structured, open-question conversations to allow the participants to share any information they would find

relevant and useful for the current study. The answers were recorded and later transcribed for further analysis, and the interviewees were assigned a code by which they were later referred to in the current dissertation.

3.4. SWOT analysis

As a result of the information collection stages of the research, a number of factors shaping the development of the urban transport policies in the context of sustainable development were identified for the Baku urban transport system. These were further processed using the SWOT analysis, which helped identify factors that promote and support, as well as those that inhibit, the development of a sustainable urban transport system in the capital city and potentially in the rest of the country.

3.5. Data analysis

As explained earlier, the research has utilised qualitative methods of data collection and processing as the most suitable in the circumstances and for the nature of the research. To ensure the most reliable outcomes, the design of the chosen research methods had to take into account the subjectivity of opinions of stakeholders, the potential limits of their understanding and vision of some of the issues discussed, as well as the country context within which the research took place (Creswell, 2007). This included regular cross-checking of the information obtained from various sources to exclude the potential bias and misunderstandings, but also to highlight any patterns and contradictions. Together, this approach ensured the application of construct validation, which, combined with triangulation, ensured validity of the outcomes (Lather, 1991; Creswell, 2007).

4. Findings

In this chapter, information gathered primarily from the available official documents and websites has been brought together to describe the major actors in transport sector planning in Azerbaijan, and the current state of Baku urban transport planning.

4.1 Transport planning responsibilities in Azerbaijan

The responsibilities for strategic planning of the transport system in Azerbaijan remain scattered among several organisations. This number increases further with the need to include sustainability considerations in transport planning. This is particularly true for sustainable urban transport planning different aspects of which are being governed by over 20 various bodies (see Table 4.1 below).

Table 1. Relevant Institutions: Sustainable urban transport in Azerbaijan

Institution	Description of the relevant role(s)	Reports to
Azerbaijan State Highways Agency (Azeravtoyol)	Design, construction, restoration, and repair of highways, bridges, tunnels and other road structures; Maintenance of highways and road facilities	President of the Azerbaijan Republic
Azerbaijan Automobile Federation	Relevant to road traffic safety[SEP]	This is a non-governmental organisation
Azerbaijan Railways CJSC	National state-owned rail transport operator[SEP]	Cabinet of Ministers Also controlled via Azerbaijan Investment Holding
Azerenergy JSC	Management of the production and transmission of electricity	Cabinet of Ministers Supervisory board, Also controlled via Azerbaijan Investment Holding
Azerishig OJSC	Provision of electricity supply to consumers	Cabinet of Ministers
Ministry of	Regulation of activities relating to	Cabinet of Ministers

Institution	Description of the relevant role(s)	Reports to
Ecology and Natural Resources	ecology, environmental protection and the use of natural resources	
Ministry of Economy	In relation to transport, responsible for policies dealing with importation and sales of vehicles and vehicle parts, etc.	Cabinet of Ministers
Ministry of Energy	Regulation of mining and energy industries	Cabinet of Ministers
Ministry of Internal Affairs	Road traffic organisation and supervision by Road police. Synchronisation of the information systems and databases; Improvement of the regulatory and legal acts	Cabinet of Ministers
Ministry of Tax	Relevant to fiscal measures related to promoting sustainable transport	Cabinet of Ministers
Ministry of Transport, Communications and High Technologies	Oversees priority determination, implementation of state programmes and co-ordination of activities in the transport sector	Cabinet of Ministers
State Agency for Renewable Energy Sources	Main regulatory institution in the field of renewable energy	Ministry of Energy
State Committee for Urban Planning and Architecture	Regulation of urban construction and development and oversight of architectural activities	Cabinet of Ministers
State Oil Company (SOCAR)	Production, processing and transport of oil, gas, and gas condensate; Marketing of petroleum and petrochemical products Supply of natural gas to industry and the public	Cabinet of Ministers
State Tourism Agency	Links between tourism (featuring high on the Government's agenda, particularly in Baku) and transport	The President of the Azerbaijan Republic
Tariff Council	Relevant to public transport tariffs	Within the Cabinet of Ministers. Headed by Minister of Economy
Baku Transport Agency (BNA)	Control and regulation of road passenger transport in Baku; Planning for future transport	The President of the Azerbaijan Republic

Institution	Description of the relevant role(s)	Reports to
	networks; Traffic management	
Baku Bus LLC	Provision of bus services in Baku	Founded by Cabinet of Ministers, reporting to Baku mayor (Head of Baku Executive Power).
Baku Metropolitan CJSC	Natural monopolist in metro passenger transport in Baku	Cabinet of Ministers. Also controlled via Azerbaijan Investment Holding
Baku Taxi Service LLC	Passenger transportations within the City of Baku and the Absheron peninsula, including to and from Heydar Aliyev International Airport	Ministry of Transport, Communications and High Technologies
Local executives	Municipalities may adopt programmes of public service delivery and/or create municipal entities in key areas including transport	The President of the Azerbaijan Republic

Based on: ITF, 2020.

As the Table shows, the **Ministry of Transport, Communications and High Technologies** (MoT) is the central body responsible for the development and implementation of strategic paths for the development of the transport sector in the country. It also co-ordinates the activities in the sector by liaising with other relevant bodies and organisations.

Figure 11 below explains the general structure of MoT. It should be noted that among the subordinate bodies of the Ministry we can see the Baku Taxi Service LLC, while other relevant agencies (e.g. Baku Metropolitan or Baku Bus) were established as independent of the Ministry, as described further.

Figure 11. General structure of the Ministry of Transport, Communications and High Technologies

Source: https://mincom.gov.az/en/view/structure/.

Within MoT, the **State Road Transport Service** (SRTS) is the central executive body who:

- takes part in developing state road transport policy;
- ensures the enforcement of the transport legislation and regulations;
- develops measures to improve road passenger and cargo transport while meeting the road transportation needs of the population and the economy;
- ensures compliance of international and domestic passenger and cargo carriers with the international and national norms and regulations; and
- is responsible for road safety provisions[1].

These functions of SRTS are fulfilled via its regional offices, one of which, Baku Regional Office, has been established for Baku.

Of the relevant subordinate bodies of MoT:

Organisation of Transportation by Road Transport LLC (former Baku Passenger Transport LLC), established in 2006, is responsible for providing "services related to the arrangement and regulation of transportation of passengers and cargoes by road (except for the cases stipulated by the legislation) and to increase the efficiency of transport operations";

The **Data Processing Centre** develops SmartPay payment systems and innovative solutions and software, and maintains the state register of information resources and information system of personal data;

Transport Training and Education Center LLC whose main purpose is "to train vehicle operators and improve their professional skills and to organize and conduct special training for drivers of commonly used motor-trucks, employees responsible for

[1] https://mincom.gov.az/en/view/organization/21/.

transport operations, workers carrying out repair and maintenance of vehicles, employees responsible for the safety of transportations in accordance with legislative and other normative legal acts"; and

Baku Taxi Service LLC.

The departments of the Ministry dealing with transport issues include:

- Department of Transport Policy,
- Department of Regulation of Transport,
- Department of Strategic Planning and Economic Analysis (separate from the Transport Policy Department)

It is not clear whether the relevant departments and/or structures are responsible, or have the capacity to take into account sustainability issues when planning for transport sector development.

In an attempt to tackle the dispersed nature of Baku urban transport planning, and to replace the failed Centre for Smart Transport Management, the **Baku Transport Agency** (BNA) was established in 2015 with a range of responsibilities aiming at centralising urban transport management, improving transport sector performance, and ensuring that its development is planned and co-ordinated with all the major strategic directions of country's economic and social development and international commitments (ITF, 2020).

Since December 2015, most issues related to urban transport planning and management in Baku have been the responsibility of BNA (Abdullayev, pers.comm.). These include:

- passenger transportation control and regulation;
- road traffic control;

- provision of centralised management of traffic flow and traffic control co-ordination with relevant bodies;
- introduction of a smart transport management system; and
- passenger transportation development[2].

Figure 12 shows the internal structure of the Agency. It should be noted that, despite the country's commitments toward sustainability in all spheres of life, BNA does not seem to have allocated a separate department dedicated to the issues of sustainability in the transport sector. Interestingly, the Agency was developed under the immediate subordination of the Cabinet of Ministers of the Azerbaijan Republic rather than MoT.

[2] http://bna.az/en/about-us.

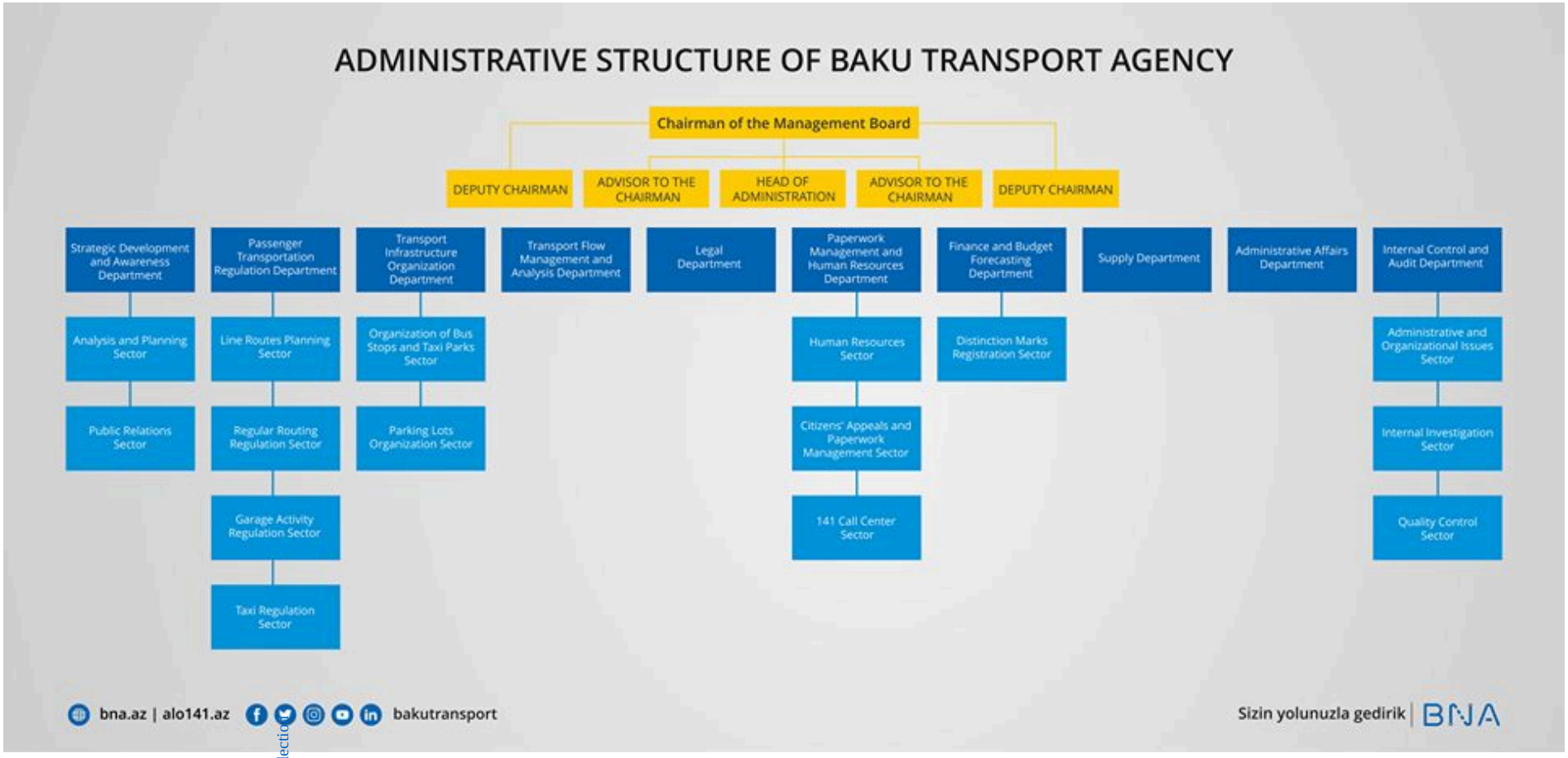


Figure 12. Administrative structure of the Baku Transport Agency (BNA)

Source: http://bna.az/en/structure.

In addition, local executive authorities are responsible for the smooth functioning of the local transport, which includes:

- carrying out assessments and maintenance of the road network;
- balancing the demand and supply of public transport;
- ensuring safety and sustainability of transport services in their jurisdiction;
- allocating and maintaining urban green zones (e.g. parks); and
- providing social assistance to the low-income part of their population.

Unfortunately, outside the 13 districts of Baku itself, nearly 40 of its suburban municipalities often lack financial and institutional capacity, as well as co-ordination between themselves, to fulfil these functions (Valiev, 2013; ADB, 2018).

Of the remaining bodies and institutions listed in Table 4.1:

- **Baku Bus LLC** was established in 2014 under Baku City Executive Power with the main purpose of providing international level transport services to inhabitants of Baku and the surrounding municipalities while ensuring security of passenger traffic[3];

- **Baku Metropolitan CJSC**, a state-owned enterprise, was established in 2014 on the basis on Baku Metro and Azertunelmetrotikinti (Azerbaijan Tunnel and Metro Construction) JSC to "reorganize the metro system in line with modern requirements, upgrade it to international standards, ensure free and safe movement of passengers, and improve passenger transportation services"[4];

- **Ministry of Ecology and Natural Resources** is directly responsible for making sure the country's economic and social development takes into account

[3] https://www.bakubus.az/en.
[4] http://metro.gov.az/en/about/metropoliten/about-company.

sustainability issues. However, its 2019-2022 Environmental Policy only mentions sustainability in the context of sustainable use of natural resources and the need to improve energy effectiveness, and of these, only the latter – in connection to transport sector development[5];

- **Ministry of Economy** has so far not published any updated strategic development policy documents, which makes it difficult to judge on its role in making sure transport sector strategies are developed in close relation to the overall country economic development goals and targets; and

- **State Committee for Urban Planning and Architecture** provides architectural and planning solutions within urban development context, ensures their compliance with the existing relevant planning and construction standards, and strives to achieve sustainability goals in urban development in order to bring the quality and standards of urban planning in line with the international standards and best practices[6].

In addition to the existing state supervisory boards for each of the agencies/organisations, Azerbaijan Investment Holding, a state-owned corporation, has been established in August 2020 with the aim "to improve the management system and operation of state-owned companies and enterprises, as well as business entities with a share of state capital, which were transferred to the management of the Azerbaijan Investment Holding, based on common principles, and increase the economic efficiency and transparency of their investment programmes, while ensuring their competitiveness and improving their financial health and sustainability"[7]. Its portfolio companies include, among others, Azerbaijan Railway CJSC, Azerbaijan Airlines

[5] http://eco.gov.az/az/ekoloji-siyaset/azerbaycan-respublikasinin-ekoloji-siyaseti.
[6] https://arxkom.gov.az/en/komite/tarix.
[7] http://aih.gov.az/about-us/about-aih

CJSC, Baku International Sea Trade Port CJSC, Azerbaijan Caspian Shipping CJSC, Baku Metropolitan CJSC, and Baku Bus LLC.

4.2 Transport sector strategic planning in Azerbaijan

As United Nations Department of Economic and Social Affairs explains, among the necessary steps to ensure sustainable urbanisation are provisions for the necessary transport infrastructure. To ensure that equity is an intrinsic part of the growth, policies should be in place that would guide the urban growth while also taking into account environmental aspects, possible health repercussions, social inclusion, and the needs of all the stakeholder groups, particularly the most vulnerable ones (UNDESA, 2018). It would therefore be reasonable to expect such policies to be developed by Azerbaijan who has committed to incorporating sustainability into its development goals.

Unfortunately, sustainability had not been explicitly on the country's priority list up until at least 2010s. Pressures of the economic development, the ageing transport system that has been lagging behind the ever growing needs of the urban population, and the lack of transport planning experience have resulted in uncontrolled growth of the private car ownership, the number of private transport providers in Baku, deterioration of the quality of the car fleet, and significant safety and air quality issues (ITF, 2020).

As was confirmed by the research and interviewees, there is no single unified (sustainable) transport strategy for Azerbaijan, or a comprehensive urban transport strategy that would serve as the basis for sustainable development of the sector in the country. It was therefore attempted to bring together any existing relevant strategic-level documents that deal with the issues of sustainable urban transport development, and analyse their provisions and effectiveness.

One of such documents was the ***2006-2015 Transport System Development Strategy*** developed for Azerbaijan with the assistance from the Asian Development Bank (ADB, 2005). The Strategy's main focus areas were: construction of new, and maintenance of the existing, roads; road traffic regulation; upgrading the car fleet to conform to the international technical and environmental requirements; and road and urban public transport standardisation and certification (MoT, 2006). The document required that equal attention be paid to economic, environmental, and safety issues in transport development; placed the responsibility for taking the best, from the environmental point of view, decisions on both the Government and the citizens; established the "polluter pays" principle as the guiding principle for providing transport services; stated the necessity to switch to more environmentally friendly means of transportation; and set the direction for the relevant tax policies (Ekoleks, 2013).

Since 2015, Azerbaijan has had no unified national transport development strategy, which resulted in the lack of co-ordination and guidance for the transport sub-sectors in the country (ITF, 2020). Transport planning has been represented by the decentralised effort of various agencies responsible for various aspects of the transport system, which, in turn, resulted in the lack of consideration given to the issues of sustainability. Some environmental indicators have been included in plans and programmes developed by such agencies, however their monitoring and analysis have not been systematically carried out at any level of planning, which makes it virtually impossible to follow on the progress of sustainable development and plan future actions (ITF, 2020).

Some needs of Azerbaijan's transport sector were covered in general in the ***Azerbaijan 2020: Look into The Future Development Concept***, a document approved by a presidential decree in December 2012[8] and establishing the wider framework for the country's economic

[8] http://www.e-qanun.az/framework/25029.

development. The document stressed the need for a balanced development of the regional transport infrastructure and integration of the country's transport system into the international network. These would be achieved via the improvement of the quality of rural and urban roads, enhancement of public transport services, overall modernisation of the transport network, and unification of the planning for all branches of the transport system.

A Presidential Decree issued in February 2021 confirmed priorities for the country's socio-economic development up to 2030 and requested that a Social and Economic Development Strategy for years 2021-2025 be developed by the Cabinet of Ministers within a nine-month period. The priorities included, among others, inclusiveness and accessibility issues, development and improvement of cargo and passenger transport corridors country-wide, and the need for more eco-friendly transport utilising alternative sources of energy[9].

Transport was also mentioned among the priorities for the state non-oil sector investments in the most recent ***Strategic Plan for Economic Development of the Azerbaijan Republic for years 2017-2020*** (MoE, 2017). The Plan also stressed the necessity to co-ordinate all the key development strategies and directions with the country's international commitments for sustainable development and the international Sustainability Development Goals (SDGs). Unfortunately, at the time of carrying out the research, no more recent plan or a similar document was available for the analysis, which could be due to the on-going efforts to develop a new country-wide development strategy.

In his presentation at a United Nations Economic Commission for Europe workshop in 2019, a representative of MoT mentioned some measures under the Government's current transport sector strategy, for example:

[9] http://www.e-qanun.az/framework/46813.

- From 1 January 2018, import duties on cars with new (minimum Euro-4 standard) engines have been set at $0.7 per cubic centimetre, while used cars would be taxed at $1.2 per cubic centimetre; and
- From 1 January 2019, import of electric cars to Azerbaijan has been exempt from value added tax (VAT). Customs duties for electric cars are currently determined at an ad valorem rate and amount to 15% of their value (Isgandarov 2019).

It is however not clear whether the "transport sector strategy" described in the presentation was in fact the most recent strategy developed for the sector or whether there was a confusion over the titles of documents since no current transport sector strategy was available for scrutiny during the research.

The presentation also named several documents, which considered some of the transport issues in the past, namely:

- ***Socio-Economic Development of Regions for 2004-2008, 2009-2013,*** and ***2014-2018***, which set the framework for the economic and social development of the country's regions for 5-year periods. The most recent of these mentions transport sector development primarily in the context of the necessity of building new and improving the existing roads and railways; and
- State Program on Poverty Reduction and Sustainable Development in the Republic of Azerbaijan for 2008-2015.

Among the most up-to-date programmes developed for Azerbaijan's transport sector as part of the country's commitments to sustainable transportation is the ***2019-2023 State Programme on Road Safety***[10]. The Programme envisages measures aimed at reducing the high number of road accidents, including injury and deaths via:

- Improving road safety management;

[10] http://www.e-qanun.az/framework/41118.

- Establishing an effective financial system to ensure road safety;
- Application of modern innovative methods in providing road safety;
- Development of appropriate mobility strategy ensuring efficient, safe and convenient movement of all road users within the road network;
- Accurate definition of the rights, duties and responsibility limits of road transport system providers and road users;
- Co-ordinating and improving rescue and ambulance services during and post road accidents;
- Public participation in road safety;
- Improving awareness, advocacy and promotion in road safety; and
- Increasing culture of using road and transport.

These measures would include, for instance, introduction and maintenance of eco-friendly vehicles, installation of the infrastructure for such vehicles, as well as provisions for cycle lanes and expanding express bus lanes. Overall, the Programme would combine transport-related objectives (such as safety, smooth operation, comfort, high efficiency, multi-selectivity and accessibility) with environmental (such as improved air quality and biodiversity preservation) and resource utilisation (the switch from vehicles operating on conventional fuels to electric cars) ones.

It is worth noting that the Programme assigns various actions to a large number of agencies and institutions, including, but not limited to, those mentioned in Table 4.1. This could potentially create additional issues of co-ordination between several actors/stakeholders whenever several of them have been assigned to any one task.

Interestingly, a comprehensive transport strategy for Azerbaijan for years 2019-2022 was mentioned as early as in December 2018, when a local news agency reported on the plans to develop such document that would aim at measures to achieve the optimal balance and co-ordination between various modes of cargo and passenger transport with the view to increase

the service life and decrease the load of roads, improve safety and quality of transport logistics, increase general road safety, speed up socio-economic development of regions and develop the tourism sector (Femida.az, 2018). However, according to a more recent report by another news agency, in April 2021 the need for such a single strategy was still being discussed between the major stakeholders – MoT, Azerbaijan Railways CJSC, State Highways Agency (Azeravtoyol), Baku International Sea Trade Port CJSC, Caspian Shipping Company CJSC, Azerbaijan Airlines CJSC, State Maritime Agency, and State Civil Aviation Agency (Aghjayev 2021).

4.3 The state of urban transport planning in Baku

The country-wide situation with transport planning is reflected in the state of urban transport planning as well, particularly for the city of Baku, where measures to improve city transport infrastructure have been largely inconsistent and unsystematic. The crisis of the 1990s meant that the state was unable to support and maintain public transport and therefore chose to deregulate the market creating a gap, which soon filled with private operators.

By 2005, however, it became clear that the resulting chaotic transport system required urgent reforms in order to be able to support the fast developing economy and urban growth. Since mid-2000s, there have been clear attempts to co-ordinate the city's transport development in line with the economic and social needs, as well as the country's environmental commitments, such as ***Baku City Transport Sector Action Plans for 2006-2007*** and ***2008-2013*** (Isgandarov 2019). On the other hand, such attempts have so far been based on an ad-hoc approach, responding to the emerging needs and ideas rather than proactively seeking long-term solutions. An example of such spontaneous decision-making is the sequence of decisions regarding the taxi fleet of the city made in the last decade. Thus, according to the Russian transport news agency Za Rulyom, as of 1 May 2012, just days before the Eurovision song contest, Russian Lada, as well as French Renault and Turkish Tofas taxis lost their licenses to

operate in the city (Za Rulyom 2012). The announcement also mentioned plans to limit the city taxi fleet to 5000, a fifth of which would initially be represented by London Taxi Geely TX4 with the view to increase the number of these vehicles to 3000 in the future.

However, the next major purchase of these cars did not happen until August 2020, when a fleet of 100 electric taxis were purchased with no infrastructure having been ready for their efficient exploitation. According to the press-release by MoT (2020), these cars, capable of running up to 130 km on electric batteries before switching to an alternative fuel option, can be charged at home or at charging points. At the same time, as reported by the Trend news agency, such charging points were still at the stage of planning and for only two locations – Heydar Aliyev International Airport and the Baku Taxi Service LLC's own depot (Alakbarov 2020). The purchase brought the number of taxis in Baku to 1200 (MoT 2020).

Another example of the 'first act then plan' kind of approach was the purchase of 300 modern gas-powered buses back in 2015, when the city was preparing for an international sports event (Kerimli 2021). The purchase also required construction of a garage to maintain the vehicles, and establishment of a new enterprise, Baku Bus LLC, at the time with the sole purpose of managing the fleet (Babayev, pers.comm.). However, according to the report, since 2015, BNA managed to build on this effort and continued renewing and upgrading the bus fleet with the view of increasing the diversity of transport modes in the city. For that, state oil company SOCAR developed compressed natural gas (CNG) vehicle fuels for Baku and established refuelling infrastructure. In 2020, 600 buses out of Baku's fleet of 2200 buses used CNG, bringing significant savings on fuel costs, and reducing air pollution (IEA, 2021).

Baku Metropolitan CJSC did not avoid the ad-hoc nature of planning decisions either. Thus, back in 2008, under the initiative of the President, a new development plan for Baku Metro was proposed within six months that would take into account the existing Baku City

Master Plan, the actual population distribution, and would co-ordinate with other modes of transport (President of the Republic of Azerbaijan, 2008). Two years later, the Plan still was not available to public at large, except some basic detail (Figure 13), which revealed an ambitious project of constructing three new metro lines, bringing the total number of lines to five, with 53 new stations and 84,3 km of new lines to be built by 2030. (President of the Republic of Azerbaijan, 2010).

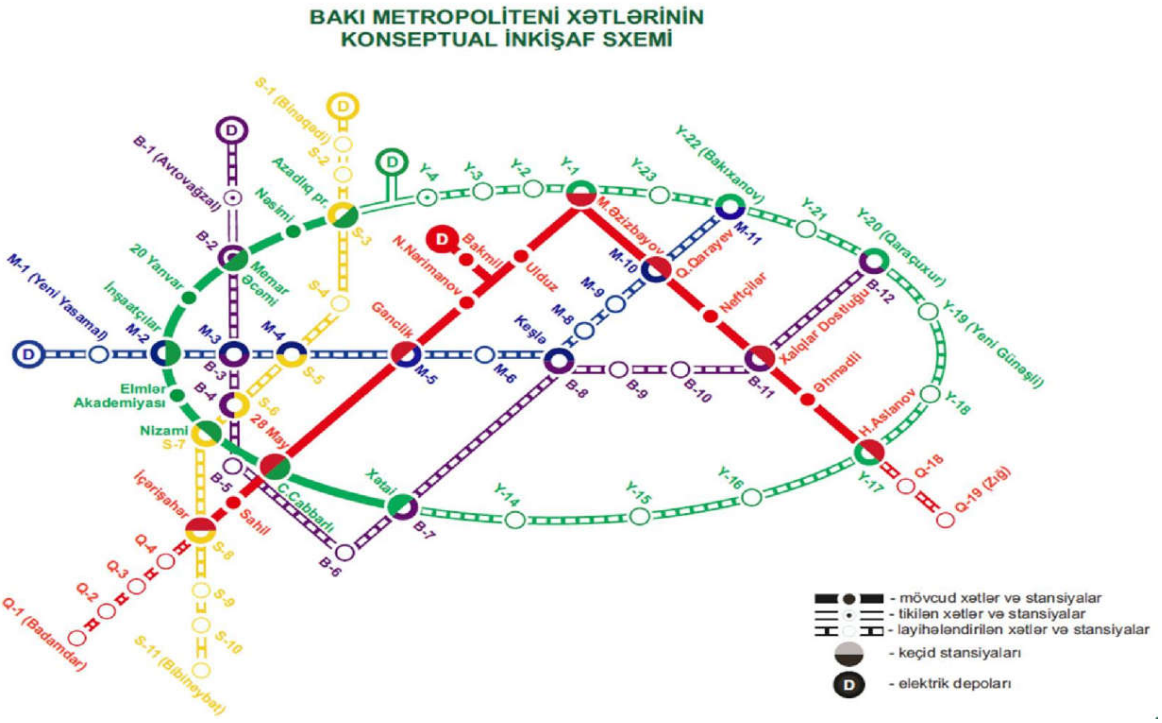


Figure 13. Baku conceptual development metro map, 2010.

Source: https://az.trend.az/azerbaijan/society/2328291.html

However, the proposed plan lacked detail, such as transfers to the existing two lines, and was developed in no relation to the then current Baku City Master Plan. This plan was too optimistic and agressive considering previous low construction speeds, and absence of financial commitments to the wide-scale future construction (Mammadov, pers.comm.). The latest Baku City Master Plan has signficantly downscaled (see Figure 14) and postponed these plans and is now envisaging construction of 26 new stations and increasing the total length of the

underground line network from the current 36.7 km up to 76.2 km by 2040[11]. Current works focus on renewal of the fleet, bringing new air-conditioned trains, replacement of old escalators and ventilation system, and station renovations. (Mammadov, pers.comm.)

The BNA also has been behind the efforts to streamline Baku urban transport planning, the most recent one being the development of the **Baku City Master Plan to Year 2040** in collaboration with the State Committee for Urban Planning and Architecture (SCUPA) (ITF, 2020).

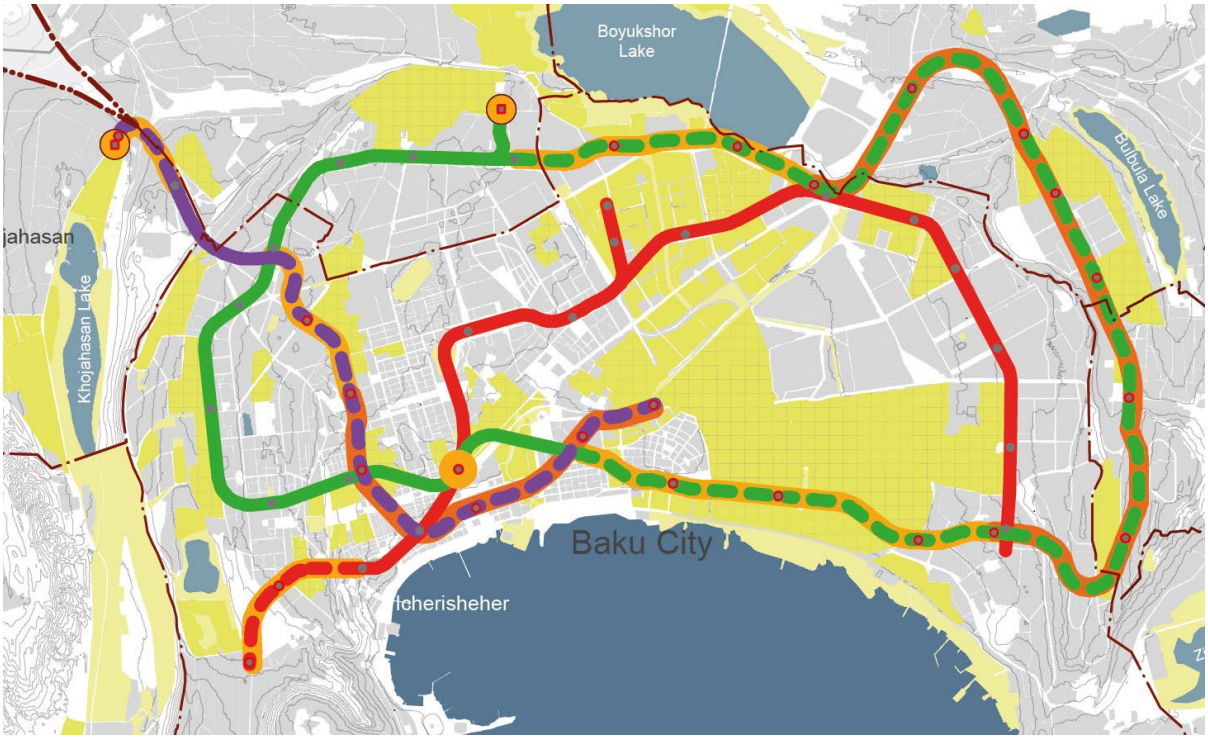


Figure 14. Metro network as per 2020 Baku master plan.

Source https://arxkom.gov.az/en/bakinin-bas-plani?plan=neqliyyat-sebekesi

[11] https://arxkom.gov.az/en/bakinin-bas-plani?plan=neqliyyat-sebekesi

The Plan concentrates on four major Priority Targets, namely:

- **Target 1**: sustainable urban development, including:
    - Polycentricity and development of new compact sub-centres,
    - Sub-centres as a multifunctional core,
    - Equal opportunities and inclusion,
    - Prioritisation of public transit, and
    - Simultaneous infrastructural development.
- **Target 2**: urban and environmental regeneration, introducing:
    - Developed system of public spaces,
    - "Clean city" solutions,
    - Constant attention to the environment, and
    - Comprehensive approach to land-use solutions.
- **Target 3**: care for architectural image and historical heritage of the city, dealing with:
    - Neighbourhood planning: appropriate architectural solutions,
    - Protection of historical heritage, and
    - Ensuring cultural life development.
- **Target 4**: new content, incorporating:
    - Creation of modern industries and new economic sectors,
    - Transformation of Baku into the best tourist destination in the region,
    - Development of "events calendar" of the capital,
    - Support for creative and neo-traditional industries,
    - Digitalisation of services, and
    - Ensuring the balanced development of the city and the country (SCUPA 2020).

As can be seen from the above, transport can be directly connected with each and every target of the Master Plan. Collaboration between the planning authorities and the transport authorities, bodies and institutions is therefore crucial in achieving the targets of the Master Plan. At the first stage of implementation scheduled to last till 2027, the most urgent measures

in various sectors of the city's life – "spatial zoning and polycentric urban development, capital construction, transport infrastructure, social infrastructure, utility systems, environmental purification and site development measures"[12] – will be introduced. At the subsequent stage, the Master Plan is set to be adjusted to reflect the achievements of the first stage and the need for sustainable development of the capital city, including housing needs, mixed public-business zones, public transport, green and reclaimed areas, and engineering facilities, based on technical and economic indicators.

At the core of the Master Plan is the idea of polycentricity (i.e. developing multiple centres within Greater Baku as opposed to the historic city centre), with a number of economic and administrative hubs being established primarily on the outer boundaries of the city and on the Absheron peninsula. It is clear that such ambitious expansion plans would involve a good deal of transport system planning, and indeed, the Master Plan envisages a large set of measures within the integrated mobility approach to support the desired developmental outcomes (SCUPA 2020):

- **Underground network development**. The Baku Metro network is traditionally considered as a backbone of the city transport system. This is reflected in the Master Plan, which, upon introduction of the new support infrastructure during the initial period up to 2027, envisages doubling both the length of the network and the number of stations by 2040.
- **Railway network development**. This vast set of measures includes restoration, improvement, and upgrading of the existing suburban railway network, as well as construction of nearly 100 km of new lines and more than doubling the number of train stations on the territory covered by the Master Plan.

[12] https://arxkom.gov.az/en/bakinin-bas-plani?plan=baki-seherinin-bas-plani-2040

- **Road network improvement and expansion**. In order to improve the traffic flow in the city and relieve its roads, a number of diagonal and ring roads/highways is proposed that would also address the issues of access to the city from the north.

- **Cycling network introduction and development**. Among the long-due measures included in the Master Plan is development of the cycling network and introduction of the supporting infrastructure. Baku has been struggling to achieve any substantial progress in this direction despite its commitments to the goals of sustainable development, therefore including this aspect on the Master Plan could become the necessary lever that could help the city move in the right direction. According to SCUPA, by 2040, the total length of the cycling lanes in Baku and surrounding areas is expected to approximate 250 km.

- **Transit Hubs introduction and development**. A large number of bus routes create congestion at the on-street bus stops resulting in buses stopping in two, if not three, lanes in the street. To solve this issue, BNA started implementing the concept of transport hubs (see Figure 15). These are organised bus stations allowing for many bus routes to terminate in an organised manner. So far, this is implemented at critical places at the fringes of the city, including an intercity bus station, a suburbs-serving metro station, and a major suburban retail zone.

- **Dedicated public transport routes improvement and expansion**. The current network of dedicated public transport lanes in Baku totals only around 16 km, which is hardly sufficient for the city of over 2.5 million inhabitants (SCUPA 2020). According to the Master Plan, by 2040, the total length of dedicated public transport lanes is expected to expand to 198.4 km.

Figure 15. One of BNA transit hubs in Baku.

Source: https://sputnik.az/life/20210410/426669481/bakida-daha-bir-neqliyyatin-mubadile-menteqesi-yaradildi.html

It should be noted that the actual Master Plan documents were not available to the public at the time of the research, therefore more detailed information on its provisions was obtained through an interview with an expert involved in its designing. Thus, although largely declarative, the current Baku City Master Plan to Year 2040 is considered an improvement to its predecessor, the Master Plan of 1984, which was rendered largely irrelevant due to overwhelming amount of construction activities taking place in the city at the time that were not envisaged by the old Plan. There is a clear attempt to connect urban development in the capital city with the country's sustainability commitments through, e.g., promotion of less polluting modes of transportation and encouraging healthier lifestyles. At the same time, the Plan lacks the mechanisms that would ensure the implementation of such measures, monitoring of the outcomes, and adjustment based on these outcomes, nor does it clearly outline roles and responsibilities of the stakeholders in implementing its provisions (Valiyev pers. comm.).

The following chapter discusses these findings and provides an analysis of the state of urban transport planning in Azerbaijan.

5. Discussion

5.1 Driving forces behind the development of urban transport planning in Azerbaijan: the case of Baku

A number of factors influencing the current state and the development of urban transport in Azerbaijan have been highlighted in the course of the current research. Thus, the significant drop in the oil prices in the last decade, and realisation that the country has developed a Dutch syndrome, has urged the Government to start looking into developing non-oil sectors of the economy. With the increasing share of such sectors (e.g. production or tourism) in the country's Gross Domestic Product (GDP), improvements in the country's transport sector are inevitable. This particularly relates to Baku urban transport system, which serves near 3 million inhabitants of the central hub for country's life and its major tourist attraction.

Another significant factor that has stepped into the scene relatively recently is the need to meet sustainability commitments of the country. It is clear from how transport issues are being tackled in Baku that the necessity to make space for sustainability considerations has been accepted and is being acted upon by all the stakeholders, particularly those charged with transport-related policy-making and decision-making. Considering that there has never been a consensus on the definition of sustainability and the way to decide on the weight of its individual elements, for a country that is still at the very early days of adopting conscious, all-round approach to its economic activities it would be reasonable to expect that some stakeholders might be currently more advanced in promoting sustainability than others.

The lack of urban transport planning and the chaotic, ad-hoc nature of some of the measures can be clearly traced back to the times when transport sector was not the priority for the Government due to the need to recover the economy and later, to establish the country's oil

sector. The resulting scarcity of the relevant experience have been undermining the country's success in bringing the transport sector, including urban transport, up to the desired standards that would be comparable to the exiting international practices. For instance, the abundance of often unrelated agencies, subordinated to different government structures, is viewed as one of the major obstacles to effective urban transport management in Baku as it results in the "lack of integrated urban transport planning and management" and "complexities and gaps in the organisational setups and distribution of responsibilities" (ITF, 2020, p18). The lack of governance is reported as a generic problem in all sectors of the economy of the country (Valiyev pers. comm.). Transport sector is not an exception, as the competing private interests result in numerous disconnected reporting lines, which, in turn, prevents the stakeholders from assuming the integrated planning and development approach. Such complicated relationships between all these stakeholders result in the lack of transparency and deterioration of responsibilities (Valiyev pers. comm.).

The situation started changing at the same time as the Government has made it its priority to convert Baku into an international cultural hub. Part of the strategy has been hosting mega-events (e.g. the 2012 Eurovision Song Contest and the 2015 European games), which gave urban transport sector a strong push to develop its capacity and infrastructure. The rising concerns over the image of the capital city, and the strive to make Azerbaijan and specifically Baku a tourist destination of an international level (the so-called "dubaisation" of Baku) have all contributed towards the shift in the attitudes towards urban transport sector and the need for its urgent reforms (Valiyev pers. comm.).

Part of the Government's attempts to make urban transport in Baku more sustainable has been focusing on developing public transport and introduction of gas and electric vehicles (Kerimli, press-conf.). Thus, in 2019 Cabinet of Ministers of Azerbaijan enacted the Requirements on passenger transportation in Baku (Cabinet of Ministers 2019). It states that all

buses for mass passenger transportation must be powered by gas or other alternative sources. Unfortunately, the implementation of the Requirements has at times been less than enthusiastic. One explanation to these sluggish and disorganised attempts could be the State's vested interests in the oil sector. According to another expert, the drop in oil revenues in the last decade or so is to be blamed for the lack of interest in promoting electric vehicles. Instead, the efforts are directed towards increasing import excise and value added tax (VAT), which increases the price of the imported cars thus limiting car ownership as electric cars are, as a rule, more expensive than the conventional ones. There is also an element of the state bureaucracy struggling to maintain its ever rising costs through the attempts to encourage the use of petrol and diesel cars due to the higher profit margins on conventional fuel types. The customs policy is therefore paradoxically not viewed as a potential tool to control the car market and reduce congestion. However, considering the Government's intentions to lower taxation rates for electric vehicles, the tax policies and public transport policies, promoting electric and environmentally friendlier vehicles, combined could, in fact, result in the increased share of electric car ownership on the city roads (Valiyev pers. comm.).

Operating urban public transport also has its specifics. Apart from its direct function of providing service and ensuring, comfort, mobility and accessibility for its customers, public transport is also a source of employment and a commodity, and as such requires technical maintenance and establishing its own labour and social protection regime which before were absent from the old model that concentrated on profitability through illegally minimising costs (Valiyev pers. comm.). In the opinion of the interviewee, the current trends in Baku public transport development signal the gradual understanding among the policy makers that public transport is not a profitable sector but rather a social function of the State and as such, is governed by different mechanisms.

Thus, since its establishment back in 2015, Baku Bus has been gradually expanding its range of operations via incremental increases in its activities by adding only a limited number of new routes a year. This, in the opinion of one of the experts, signals the understanding of the specifics of managing urban public transport. Too much control of the network from the outset could result in inefficient operation in the absence of experience, while monopolising public transport could cause political instability as a result of limiting private operators' interests (Valiyev pers. comm.).

Figure 16. Bakubus bus garage.

Source: http://www.life.az/index.php?newsid=29835

The importance of understanding the nature of public transport business can be seen in the example of taxi services. While Baku Taxi Service LLC has clearly shown its commitment to improving its services and the quality of the taxi fleet of the city, the feasibility of some of their projects remain somewhat questionable. For instance, after the initial purchase of 1200 petrol London taxis, followed by the purchase of 102 electric ones, and calculating and setting fees for their services that would reflect the price of purchase and maintenance of the vehicles (Baku Taxi Service LLC, 2020), it soon became evident that these taxis are incapable of

competing on the market as private companies, such as Uber and Bolt, as well as private car owners, have been setting their prices several times lower.

Other measures implemented and/or planned for Baku by BNA include, but are not limited to, upgrading and expanding the smart traffic control system, improving the safety profile of public transport, and implementing sustainable mobility goals via prioritising modes of transportation with the least adverse effects (Kerimli, press-conf.). The main focus for the Baku Transport Agency (BNA) has been to create the urban infrastructure that would be first and foremost pedestrian-, bicycle- and public transport-friendly. Thus, expanding the network of bus lanes and another one, for bicycle users, is high on BNA's priority list, despite concerns raised with regard to potential slowing of traffic and traffic jams, particularly where bus lanes are being introduced. BNA's major argument in this case is that "Streets are not for cars, streets are for carrying people", and the Agency is said to be open for discussions albeit "with experts" (Kerimli, press-conf.). It is not clear who could be considered as an expert and how BNA suggests ensuring that opinions and needs of all stakeholders are equally considered.

Figure 17. First cycling lane in Bilgah suburb, 2021.

Source: https://bna.az/az/news/1350

While the progress achieved by BNA is undeniable, there are still numerous issues that prevent the city's transport system from becoming a success story. Among such issues is the question of whose responsibility it is to maintain larger roads and highways within Baku boundaries. Currently, construction and maintenance of motorways across the country is the responsibility of Azeravtoyol. Interestingly, this agency's experience and capacity are limited to building heavy-duty high-speed interregional roads. As a result, new roads built by Azeravtoyol in Baku in the last several years have been of wrong specifications and unfeasible for the urban environment and the budget (Valiyev pers. comm.).

Prior to 2018, among the responsibilities of Azeravtoyol was installation of wheelchair access ramps at pedestrian crossings, and pushchair access ramps and wheelchair access lifts at underground pedestrian crossings. However, the Agency was heavily criticised for its corrupt practices and the lack of the systematic approach to the task, which resulted in transferring at least some of these responsibilities (namely, installation of wheelchair access ramps at pedestrian crossings) to BNA in March 2018 (Samedov, 2018). It is still unclear whether this measure has made much difference, particularly as part of these responsibilities remain with Azeravtoyol operating directly under the President. There have been numerous incidents now, including witnessed by the author, when implementation of road safety measures (such as moving traffic lights to a more suitable location) resulted in abandoning newly constructed wheelchair access ramps and the need to build new ones at the new location. Also there is no clarity on whether BNA and Azeravtoyol co-ordinate with each other on these issues (Hamidov, pers.comm.). It is, however, an established fact that a lot of access ramps in Baku have been installed without carrying out any assessments of their design, usability, ease of operation and maintenance, or indeed, safety. E.g. the approach to these ramps is often paved with marble or other natural stones, which become dangerously slippery in winter (Sputnik, 2020).

Interestingly, Azeravtoyol's Charter states in its articles 3.1.8 and 3.1.21 that in its activities, the Agency must follow urban planning norms and regulations (Azeravtoyol, 2017). Still, without a substantial change in the will and priorities of the political powers, urban development, such as that under the new Master Plan, is expected to continue to be adjusted to satisfy the ad-hoc interests of the key political actors, with the uncontrollably increasing population density in the centre and the sprawl in the suburbs.

Baku has historically suffered from a number of issues yielding an atmosphere characterised by poor driving and pedestrian culture. It is precisely this atmosphere that remains responsible for the high rate of road accidents and low awareness and/or respect for traffic rules (State Statistic Committee 2021). Road fatalities declined by a third during the last decade, however more intervention is needed. For comparison, in only 5 years, BNA achieved threefold reduction in fatalities involving public buses.

Figure 18. Deregulated taxi sector near the Koroglu metro station exit.

Source: http://www.live.az/index.php?newsid=23776

One of the major issues is the accessible means of obtaining driver's licenses without passing the mandatory two-part test (Huseynova, pers. comm.). The high level of corruption enables drivers-to-be to reach deals with driving examiners and be issued licenses without receiving proper training.

The state has so far done little to battle corruption in the case of future drivers. Attempts to spread public awareness or launch social advertising have largely failed to reach their target audience. Namely the state-initiated defensive driving programme administered by the State Automobile Service since 2019 (Avtosfer 2019) remains unpopular because of limited publicity and participation fees.

Owning a vehicle in the Soviet times was associated with certain luxury: it could take years for a Soviet citizen to wait their turn to be able to purchase a car for personal use. Starting in the 1990s, cars in the rapidly urbanising Baku went from being a luxury to being a commodity and much easily obtainable, leading in turn to an instant drastic increase in their use. A city barely prepared to accommodate intensive traffic faced serious infrastructural issues, starting from the width of the city streets (Xidirov, pers.comm.). Most of the roads in downtown Baku were planned and surfaced before the Russian Revolution of 1917 and are thus are limited to one or two lanes. The authorities, who had little experience dealing with such issues, encountered difficulties in establishing coherent road signage. Parking issues in Baku remain unresolved to this day.

There is also little consideration for pedestrians when designing road infrastructure, namely shortage of properly designed pedestrian crossings or their inconvenient location. In addition, intersections outside of the city centre are seldom equipped with crossing lights. As a result, pedestrians often do not feel obligated to use the limited options available to them and rely on their personal judgement.

Figure 19. Poor behaviour of pedestrians

Source: http://avtostop.tv/az/avtofayda/view/300

Analysing the chaotic nature of decisions, including in the transport sector, is, in the opinion of one of the experts, the direct result of the Presidential initiatives introduced and then controlled by the family of the President. Other stakeholders rarely voice their needs and suggestions for changes, which signals the absence of political will. In the transport sector, this 'single-track' top-down approach finds its reflection in the fact that transport policies and strategies lack the implementation mechanisms and are often perceived as formal and therefore not obligatory to fulfill, monitor and follow up (Valiyev pers. comm.). One example of what the heavy top-down approach could lead to is the Baku Metropolitan development plan. The earlier version of it was developed in response to the Presidential Decree back in 2008, and it almost looked like its developers were trying to please the President with the ambitious projects rather than produce something that would be both feasible and well thought-through.

Looking at the available Baku City Master Plan information, it is difficult to say whether the Plan envisages any incentives for the stakeholders to alter their transport-related views and

habits as contribution towards achieving sustainability goals. The same relates to any of the past or present programmes and strategies that were available to the author for scrutiny. Without making sure that all stakeholders understand the context, the aims and mechanisms of fulfilling them, all the relevant initiatives remain merely tick-box exercises whereby the actions are being designed at the top with no connection whatsoever to the actual needs and aspirations of the public at large, and are then required to be fulfilled without questioning them.

The recent establishment of the Azerbaijan Investment Holding became a somewhat unique attempt to centralise management of several relevant agencies' activities, which otherwise have long been inefficient, unprofitable, and survived purely on subsidies, as explained by a lawyer and financial specialist Akram Gasanov (Samsonova, 2020). While concentrating the management of transport agencies under the umbrella organisation presents opportunities for more unified approach to their activities, development and strategies, it is at the same time worrying as, according to Mr. Gasanov, the powers behind establishing of the Holding made a clear statement that they will only be accountable directly to the President of the country. There are also worries that the lack of transparency stemming from the nature of the Holding, will lead to a certain level of immunity of the organisation from liability and to bullish attitude towards its private sector competitors (Samsonova, 2020).

All the above can be viewed as driving forces of the urban transport sector development in Azerbaijan, some to a greater extent while other to a lesser. All these factors can be divided into groups depending on their influence on such development. Next section of this chapter presents the strengths, weaknesses, opportunities, and threats (SWOT) analysis of these driving forces.

5.2 SWOT analysis

5.2.1 Strengths

Some of the factors revealed in the course of the research as the potential strengths of the existing urban transport system, were:

- Sustainability commitments of the country,
- A range of measures envisaged by BNA to improve performance and safety of urban transport, and
- BNA's commitment to put people first, cars last.

5.2.2 Weaknesses

Quite a few driving forces of the urban transport sector development in Azerbaijan could be seen as weaknesses of the current system, as they clearly have the potential to impede such development, e.g.:

- The heavy share of the oil sector in the country's economy which prevented other sectors from developing for a substantial period of time (the 'Dutch syndrome'),
- Lack of transport planning experience,
- Ad-hoc nature of some measures,
- State bureaucracy,
- Lack of labour and social protection regime,
- Lack of feasibility assessments,
- Lack of institutional capacity,
- Lack of competitiveness of the state agencies,
- Lack of enforcement,
- Not all stakeholders get a chance to air their views and concerns, and
- Majority of initiatives coming from the President, and their implementation controlled by the Family.

5.2.3 Opportunities

At the same time, a number of factors which have been playing a certain role in the development of the urban transport system, represent opportunities for this system, for instance:

- Drop in oil prices, which forced the Government to shift its focus to other sectors of the economy, including transport,
- Investments in non-oil sectors, such as tourism, culture and sports, which require well-developed urban transport,
- Government's goodwill,
- Mega-events, which the Government has been using to attract international interest towards the country,
- Taxation & customs policies, which favour the more sustainable vehicles and methods of transportation,
- Increased understanding among stakeholders of the specifics of transport sector planning and functioning,
- Commitment of stakeholders to improving their transport services, and
- Establishment of an umbrella agency (Azerbaijan Investment Holding) which the chance to co-ordinate the activities of a number of transport agencies.

5.2.4 Threats

Finally, some of the factors revealed by the research, still have the potential to jeopardise the Government's commitment to achieving sustainable urban transport, such as:

- There are still too many agencies sharing transport-related responsibilities and reporting to different government structures, which makes the process of co-ordination between them too complicated and might tempt these agencies to carry on their activities without consulting with anyone else,
- Lack of transparency,
- Lack of co-ordination between various groups of stakeholders,
- Vested interests in oil sector,
- Lack of incentives,
- Lack of monitoring and follow-up mechanisms, and
- Family of the President still in control of all the major initiatives and agencies.

6. Conclusions and recommendations

6.1 Conclusions of the research

Azerbaijan is still at the early stages of merging the ideas of sustainability with its transport planning practices. The country's transport sector was largely left to its own devices for nearly two decades since independence. Economic development of Azerbaijan in late 1990s-2010s was a direct result of the efforts to advance its oil sector. In this oil investor-friendly environment, very little attention was paid to other sectors of the economy, including transport, which kept growing uncontrollably driven purely by the immediate demand rather than a vision.

That situation soon started changing, though, as the realisation came of the dangers of having only one sector of the economy developed at the expense of all the rest. The country's powers that be started seeking to make Azerbaijan not just a convenient source of conventional fuels for those who were willing to pay, but an attractive place for various other investors and tourists. Such drastic changes required, among others, a complete overhaul of the way transport planning has so far been approached in the country, and the first signs of the right processes appeared with the attempts to establish transport development frameworks, from country-wide transport strategies to more local (urban) plans. The first attempts have been rather clumsy and uncoordinated, leading to the decision-makers darting in their chosen directions uncontrollably and pulling the development of transport sector where they believed they should be moving.

The situation started gradually changing in the last decade or so, with the realisation that transport planning needs a more centralised and systematic approach. Reorganisation of the transport agencies and their functions presented an opportunity to create such a centralised system, while the overall sustainable development commitments of the country provided the framework within which the new planning system could be developed. This approach has

already started bringing positive results, such as improved road safety, better quality public transport vehicles, upgraded road infrastructure. Current ambitions are to take urban transport further towards becoming sustainable, providing mobility and equity while preserving the environment.

However, the country still has quite a long way to go to achieve these goals. As the research shown, there is a clear lack of expertise in transport planning at all levels which can still result in poor decisions. The overall administrative structure of the sector is too bulky and chaotic, with various aspects of transport planning dispersed among functions of many agencies and organisations that do not see co-operation as the key to a successful planning process. At the same time, all the major initiatives, including those related to the transport sector, in the country come from the President who then delegates their execution to the relevant agency or agencies. While the President has demonstrated on numerous occasions his commitment to the sustainable development goals and showed a good level of understanding of what the country needs to keep developing, such a hierarchy of decision-making seems rather awkward as leaves the question of what the function of bodies such as the Ministry of Transport is.

Also the fact that some of these agencies report directly to the President rather than to the Ministry, creates a certain confusion over how the transport sector is actually administered. It might even be the case that, knowing that the final say in certain decisions will be the President's, the Ministry or some other, lower-level, agencies might withdraw from suggesting any new ideas or scrutinising the existing ones. Direct reporting to the President also makes these agencies' work less transparent and more difficult to co-ordinate between themselves.

Nevertheless, the progress in transport planning, particularly urban transport planning, is obvious. Decisions made by the Baku Transport Agency (BNA) since its establishment back in 2015, have already made Baku urban transport safer and passenger-friendlier. The Agency is

working hard on promoting environmentally friendly modes of transportation and improving the road infrastructure to accommodate for the needs of all road users – something that has been neglected throughout the entire history of independence of the country. From purchase of less polluting buses with wheelchair access to creating wheelchair/pushchair access ramps at crossroads, from planning bus and bicycle lanes to ensuring increased mobility of the urban public transport at no expense to the environment – BNA has been learning and applying its growing knowledge of urban transport planning to make the city of Baku more liveable in, and more equitable for all its inhabitants and visitors.

Taking into account the findings of the research, below are the recommendations on possible steps to further improve urban transport planning in Azerbaijan, particularly in Baku.

6.2 Recommendations

The following recommendations to the transport policy makers and decision-makers, developed as the result of the research, are hoped to help make this process smoother and as effective as possible.

It is clear that any reforms of the urban transport sector should be comprehensive and take into account all aspects of transport sector development. Therefore, multi-layer reforms seem as the most feasible approach to the issue, namely:

At the policy level:

- Pass the planning and decision-making powers that currently lie with the President, to the designated highest level state transport agency – the Ministry of Transport. Ensure the transparency of its decisions, involvement of stakeholders and accountability.

- ❖ Establish national transport strategy, providing vision for urban and interurban passenger transport development, alternative transport and micro-mobility in cities.
- ❖ Set up and advertise urban transport development programmes and targets based on key transport challenges and on sustainability agenda, in order to step away from ad-hoc decision making.
- ❖ Adopt new Baku City Master Plan, provide efficient mechanism to ensure it is transparent and is followed by all actors.

At the administrative level:

- ❖ Establish a new body to coordinate regional passenger transport on the Absheron peninsula agglomeration (Greater Baku, neighbouring Sumgayit and Xirdalan cities), to drive the development of the network, integrate different transport modes, plan new routes and stops to improve service coverage, set parameters for quality service, and perform marketing activities. This will fix the fragmentation in transport planning and decision-making.
- ❖ Give BNA powers to: establish city-wide parking management; critically review road infrastructure projects (with veto-power) designed by Azeravtoyol for compliance with modern pedestrian-oriented street-planning approach.
- ❖ Enforce land-use and city planning legislation to clean up streets and especially sidewalks from illegal construction and obstacles, creating improving mobility and cohesion for pedestrians.

At the infrastructure level:

- Prioritise investments into, and speed up, metro construction to remove bottlenecks and expand the metro network. Increasing capacity of metro is a key element to reduce congestion on city's main roads.
- Rehabilitate and expand suburban rail network to create an alternative to road-based travel.
- Develop cycling infrastructure starting from less congested areas, e.g. connecting resorts, beaches, parks. This might be a win/win solution to accommodate safety concerns, promote healthy mobility, and exclude 'competition' with busy traffic.
- Bring bus stops closer to metro entrances, and create Park+Ride areas near large bus/metro stops in peripheral districts.

At the public transport improvements level:

- Introducing round-the-clock scheduling for suburban trains and infrequent bus routes to increase both capacity and attractiveness of these modes of transportation. This will also help to reduce congested motorways at city entrances.
- Reclassify bus routes into 'trunk' and 'local', and then straighten 'trunk' routes to ensure faster connection between opposite locations. This will attract passengers who are forced to use taxi to avoid time lost in detours (in already congested city).
- Establish timetables for buses with intervals greater than 10 min (6 pairs per hour) to prevent loss of passengers.
- Launch night bus network at fixed intervals to improve night-time mobility.

- ❖ Launch social advertisement to increase attractiveness of public transport as metro and the bus fleet continue to be renewed.

At the social level:

- ❖ Improve acceptability of the ideas of sustainable (urban) transport via providing information and continuous education to the public at large.
- ❖ Improve driving culture as part of the overall safety improvement agenda.
- ❖ Create a system of incentives for road users to switch to more sustainable modes of transportation.

Building up institutional capacity at all levels:

- ❖ Introduce courses for planners and decision-makers on transport planning that would develop an understanding of how transport systems work in connection to all other aspects of the economic and social life and within the paradigm of sustainability.
- ❖ Clear and transparent budgeting for transport planning at all levels as opposed to finances being allocated by Presidential decisions under sporadic Presidential initiatives.
- ❖ Close and continuous liaison between all the agencies and other stakeholders to make sure no development in any one area of transport sector takes place at the expense of others unless clearly shown as beneficial for all parties.
- ❖ Ensure enforcement of the laws and a coherent system of fines to help bring urban transport under control.

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Appendix. Examples of interview questions

Question Set 1

1. What is the process of urban transport planning in Azerbaijan (with focus on Baku) and what are the roles of those involved in it (stakeholders, decision-makers)?
2. What factors influence Baku urban transport system planning: internal/external, economic/social, health/environmental, mentality/legacy, institutional capacity/decision-making?
3. What are the benefits of the existing urban transport planning and management system for the economy, society, environment, stakeholders?
4. What weaknesses in urban transport planning do you see at the current stage, affecting economy, society, environment, stakeholders?
5. What changes, if any, do you reckon have been taking place in urban transport policy/development in recent years and what would you consider the driving forces for these changes?
6. How beneficial, in your opinion, have the recent organisational changes and transfer of responsibilities been for various aspects of the urban transport system (e.g. congestion, public transport, transparency, others)?
7. Out of the measures you are aware of, which ones would you consider as successful, which ones could be further improved, and how, and which ones did not prove as effective?

Question Set 2

1. What drives urban transport development in Baku? (recognition as important element of the city life in general or element of fashion / image – keep these as suggestions, see what he says first)
2. Master plan: chaotic development benefits business elites in construction. Demise of public transport in 1990s– was that a related process or just the lack of attention/financing within state?
3. Shifts in control over transport: fight of elites, tactical (mega-event driven?) or conscious understanding of a need for change?
4. Who (what group(s) of stakeholders) is/are pushing for any changes, if any, and are these changes being jeopardised by any group(s) of stakeholders? (which?)
5. What issues are urban governance and administration structure facing that could potentially affect the urban transport development?
6. In your opinion, what are the reasons for the lack of reliable statistics on many indicators, e.g. lack of planning (urban transport not a priority), lack of institutional capacity (specialists, experience, equipment, finances), avoidance to show shocking numbers, or trend to hide everything?