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Developing sustainable urban mobility policy on car sharing and carpooling initiatives Tajikistan

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UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

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Tajikistan

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UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE (UNECE)

The United Nations Economic Commission for Europe (UNECE) is one of the five United Nations regional commissions, administered by the Economic and Social Council (ECOSOC). It was established in 1947 with the mandate to help rebuild post-war Europe, develop economic activity and strengthen economic relations among European countries, and between Europe and the rest of the world. During the Cold War, UNECE served as a unique forum for economic dialogue and cooperation between East and West. Despite the complexity of this period, significant achievements were made, with consensus reached on numerous harmonization and standardization agreements.

In the post-Cold War era, UNECE acquired not only many new member States, but also new functions. Since the early 1990s the organization has focused on assisting the countries of Central and Eastern Europe, Caucasus and Central Asia with their transition process and their integration into the global economy.

Today, UNECE supports its 56 member States in Europe, the Caucasus, Central Asia and North America in the implementation of the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs). UNECE provides a multilateral platform for policy dialogue, the development of international legal instruments, norms and standards, the exchange of best practices and economic and technical expertise, as well as technical cooperation for countries with economies in transition.

The norms, standards and conventions developed at UNECE in the areas of environment, transport, trade, statistics, energy, forestry, housing and land management, innovation or population, offer practical tools to improve people's daily lives. Many are used worldwide, and a number of countries from outside the region participate in UNECE's work.

UNECE's multisectoral approach helps countries to tackle the interconnected challenges of sustainable development in an integrated manner, with a transboundary focus that helps devise solutions to shared challenges. With its unique convening power, UNECE fosters cooperation among all stakeholders at the country and regional levels.

TRANSPORT IN UNECE

Today, UNECE services 59 United Nations inland transport conventions. Several of the Conventions are global either by design or because their success has caused them to grow beyond the UNECE region. In addition to negotiating the amendments to existing legal instruments, UNECE has been active in facilitating new legal instruments. Its normative activities are enhanced with developing methodologies, guidelines, and definitions on subjects such as transport planning, data collection and the collection of transport statistics. UNECE's work on transport is governed by the Inland Transport Committee (ITC) and its 20 Working Parties, which are in turn supported by more than 40 formal and informal expert groups and in cooperation with 11 treaty bodies (Administrative Committees). Annual sessions of ITC are the key moments of this comprehensive intergovernmental work, when the results from all subsidiary bodies, as well as the UNECE Sustainable Transport Division, are presented to ITC members and contracting parties.

In addition to servicing ITC and its subsidiary bodies, the Division also services other intergovernmental bodies including the ECOSOC Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals, as well as 11 treaty bodies of United Nations legal instruments and the TIR Executive Board. In cooperation with UNESCAP, UNECE Sustainable Transport Division supports the United Nations Special Programme for the Economies of Central Asia (SPECA). It also annually alternates with UNESCAP as the secretariat to the SPECA Thematic Working Group on Sustainable Transport, Transit and Connectivity. In cooperation with the UNECE Environment Division and the World Health Organization (WHO) Europe, the Division services the Transport, Health and Environment Pan-European Programme (THE PEP). It ensures the management and oversight of the Trans-European North-South Motorway (TEM) and the Trans-European Railway (TER) projects. The Division supports the accession o and implementation of the UN legal instruments through policy dialogues, technical assistance, and analytical activities with the priority of promoting regional and subregional cooperation and capacity-building. Finally, since 2015, UNECE hosts the secretariat of the United Nations Secretary-General's Special Envoy for Road Safety and since 2018 the secretariat of the United Nations Road Safety Fund (UNRSF).

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Introduction

This publication has been prepared in the framework of the project on "Strengthening the capacity of Central Asian countries to develop sustainable urban mobility policy on car sharing and carpooling initiatives". The goal of this project is to improve understanding by national policy makers in Central Asia of the basic requirements for implementing car sharing and carpooling initiative and build the capacity of national and local policy makers in Central Asia to develop and implement sustainable transport policies focused on car sharing and carpooling initiatives. It covers more specifically Kazakhstan, Kyrgyzstan, Tajikistan.

This publication targets policy makers from Tajikistan seeking to set up and regulate such initiatives at the national and local levels.

Definitions and concepts

Sustainable development is a core component of modern international policies aiming at solving the problem of urbanization and covering economic and social development, security, and environmental protection. An important trend in the sustainable development of urban transport infrastructure is the collective use of road network, where carpooling and car sharing can complement public transport.

Definitions

Car sharing and carpooling are key examples of the sharing economy, based on the idea that it is more convenient to pay for temporary access to a product through a marketplace than to own the product. For those citizens who prefer not to own expensive assets in order to avoid liability and costs, the use of sharing allows them to access all the benefits of technology without the cost of owning and maintaining.

Car sharing is a service that provides members with access to an automobile for intervals of less than a day. Major car sharing business models include traditional or round-trip, one-way or free-floating, and peer-to-peer (P2P), which allows car owners to rent them to other private users.[1] Another model of car sharing is stationary car sharing which provides only round trips at fixed stations. These services can be provided by specialized companies (most often for intracity and/or short trips) or individuals. This model of car rental is convenient for example for occasional use of a vehicle or when one needs a car that differs from body type and load capacity from the one usually used. car sharing is one of the global directions in the development of the sharing economy, when the population avoids acquiring goods in ownership in order not to bear responsibility and costs, but continues to have access to the benefits they can provide, through a shared usage. In 2016, car sharing organizations were implemented in more 2,095 cities around the world.

Carpooling involves adding passengers to a private trip in which driver and passengers share a destination. Such an arrangement provides additional transportation options for riders while allowing drivers to fill otherwise empty seats in their vehicles. Depending on the method of planning a joint trip, the following types of carpooling are distinguished:

- Classic – as a rule, a long (from 100 km) trip, planned in advance (from 1 day to several months)
- Dynamic – movement in urban space for short distances (1–100 km) in the presence of alternatives (by own car, public transport, taxi, bicycle or on foot)
- Regular – participants, route and schedule of the trip are constant.

[1] Strengthening the capacity of Central Asian countries to develop sustainable urban mobility policy on car sharing and carpooling initiatives", UNECE, 2020. https://unece.org/transport/publications/strengthening-capacity-central-asian-countries-develop-sustainable-urban.

Car sharing models:

Free-Floating allows users to rent and return a car to any location within a defined territory. To create a free-floating car sharing business model, companies need to take into account the following factors:

1. Geographical location of the population and density of the districts in order to attract the required number of customers;
2. Pricing policy: setting the price per minute;
3. Redemption from the city authorities of parking spaces in paid parking lots;
4. Ensuring the required number of cars for rent.

Station-to-Station includes fixed car rental locations and round trips ending at the starting point of the car rental.

How car sharing works: An example from the Russian Federation (city of Moscow)

At the beginning of 2022, Moscow came out on top in terms of the number of car sharing cars, today there are about 30 thousand of them.

In 2022, the number of car sharing users exceeded one million people. Until recently, car sharing in Moscow was allowed to persons over the age of 21 with at least two years of driving experience. Currently there are companies that allow 18-year-old drivers, including those without experience, to use their services. Verification of documents for registration in car sharing companies usually takes several hours. The Metropolitan Department of Transport supports fast rentals and car sharing, and the city subsidizes the interest rate on leasing cars. Car sharing users themselves do not pay for parking in the capital, rental companies do it for them. However, there is a preferential parking rate for merchants. To get a car, it is necessary to register with one of the existing companies (with a photo, passport and driver's license) and sign a contract. Cars are scattered all over the city, drivers can find the nearest one using a mobile application and leave it in the parking lot when they reach their destination. Most companies provide cars for several hours or days. The cost of mileage is usually added to a fixed price. The car can be unlocked with the smartphone, and the key is firmly fixed in the ignition lock. Using the "waiting" rate, it is possible to keep the car parked for a certain amount of time. Rates are managed through a mobile application. Money for using car sharing in Moscow is automatically withdrawn from the bank card, which is linked to the personal account of the mobile application.

Success factors for car sharing business models

The general methodology for determining the most effective car sharing models is represented in the table 1 below. This table represents the study in stages, reflects the development of approaches that together form the methodology for implementing car sharing methods.

Table 1 Car sharing modes analysis[2]

Territory of use			Vehicle type			Fee structure			Parking type		
FF	S	P2P	FF	S	P2P	FF	S	P2P	FF	S	P2P
City centre			Small cars			Time-based			Municipal parking		
+		+	+		+	+			+		
City boundaries			Middle class type			Distance-based			Commercial		
+	+	+	+	+	+		+			+	
Regions			Freight			Fixed rate			Private territory		
	+	+		+	+	+		+			+

FF – Free floating; S – Stationary; P2P – Peer-to-peer

[2] Car Sharing in Europe Business Models, National Variations and Upcoming Disruptions, Deloitte, https://www2.deloitte.com/content/dam/Deloitte/de/Documents/consumer-industrial-products/CIP-Automotive-Car-Sharing-in-Europe.pdf.

Context in Tajikistan - National level

Transport by road is the main transport mode for passengers: it covers 99 per cent of the total passenger volume in 2021. The annual increase of the passenger volume has been increasing on average by 8 per cent between 2000 and 2018. There are 14 339 km of public roads: about half of the international and national roads, but only 22 per cent of local roads, are made of asphalt concrete surface.[3] As of 31 December 2022, 12 295 buses, 8825 micro-buses and 276 trolleybuses were registered in Tajikistan.

Transport is one of the main factors influencing air pollution. As of 2021, there were 3,992 cars registered in the city of Dushanbe.[4] It should be noted that according to the IQAir rating, the average PM2.5 concentration in Tajikistan in 2022 was 9.2 times the WHO annual air quality guideline value.[5] The country was in the top ten of the countries having the worst air quality index in 2022. According to this rating, the average annual PM2.5 concentration for Dushanbe was 59.5 μg/m^3, making it the fourth world's most polluted capital city in 2021.

Traffic jam in Dushanbe

Public transport service operators are state-owned companies and offer intracity services (by bus or trolleybuses). Regarding private transport, several large taxi companies are operating in Tajikistan. Some of them have their own mobile applications to help customers access their services. There are also illegal carriers who operate. Initiatives for the development of car sharing have not yet been developed, and no carpooling platforms exist. The search for fellow travelers is limited to social networks. The concepts of "car sharing" and "carpooling" are absent in national and local legislation.

Taking into account the implementation of the National Development Strategy for the period up to 2030, the current state and development of urban passenger road transport services in Tajikistan shows that efforts are still to be made to develop urban passenger road on the long term.

[3] Tajikistan Transport Sector Assessment, Asian Development Bank, 2021, https://www.adb.org/sites/default/files/institutional-document/755636/tajikistan-transport-sector-assessment.pdf.

[4] Statistical Agency of Tajikistan.

[5] https://www.iqair.com/tajikistan.

Context at the local level: the case of Dushanbe

The capital city of the country, Dushanbe, is surrounded by directly adjacent densely populated areas of the Hissar Valley. There is a large number of vehicles transiting through the city. The lack of a bypass road complicates the organization of the traffic within the city, causing serious congestion during rush hours. There are not enough parking spaces in the city, and on most streets, the rightmost lane is used for temporary parking, which reduces street flow capacity. As of 10 October 2022, 3,992 cars were registered in the city of Dushanbe.[6] Fixed-route taxis account for about 55 per cent of passenger traffic. Minibuses have a relatively small capacity, and their large number leads to the formation of traffic congestion.

Dushanbe has no car sharing and carpooling operators at the time of this study. Only taxi services officially operate in the city. The price of taxi services for passenger transportation remains high in comparison to the quality of service provided. Today, there are about 7 companies in Dushanbe offering taxi services.

Trolleybuses in Dushanbe

Dushanbe executive body of state authority, within the framework of the implementation of the instructions of the Government of the Republic of Tajikistan and the relevant Decrees of the Chairman of Dushanbe, adopts and implements certain decisions, programs and action plans to facilitate the functioning and improvement of transport services.

The program "Development of Public Transport in Dushanbe" was adopted and implemented from 2014 to 2019 and was aiming at strengthening the development of passenger transport in Dushanbe. Within the framework of this program, trolleybus infrastructure in the city has been partially repaired and improved. The speed of trolleybuses increased from 13 km/h to 17 km/h and the regularity of the trolleybus traffic on the routes increased by 1.5 times. Four modern trolleybuses with a speed of up to 15 km/h were purchased. From 2017 to 2019, 64 buses and 200 buses compliant with EURO-5 international standards were purchased from the budget of the city of Dushanbe.

The Dushanbe city executive body of state power implemented the project "Electronic system of road payments and its control in public passenger transport in Dushanbe" to create a favorable environment for a fair competition in the transport services market. Currently, 16 buses using this system are operating and trolleybus routes are equipped with an electronic payment system using an e-card and a dedicated mobile application.

[6] According to the Statistical Agency of Tajikistan.

To implement this project, more than 350,000 transport cards were sold, and 33,000 free cards were provided to persons benefiting from social protection measures. One hundred twenty special terminals for the sale of cards and 300 terminals for top-ups have been installed in the streets and squares of Dushanbe. The implementation of this electronic system has a number of advantages, including faster ticket purchasing and boarding, reduced costs for passenger transport companies, and improved service quality and passenger experience.

In February 2023, Yandex Go launched in Dushanbe an online service allowing to book rides and food delivery. However, no carpooling and car sharing services were offered through this application. The Ministry of Transport, the Dushanbe Administration and the Dushanbe Police Directorate stated that Yandex go is operating in Tajikistan illegally: whereas the company presents its services as an information platform, the Ministry reminded that these services are those of a taxi dispatching service, and that it should in consequence follow the Road Transport Code of the Republic of Tajikistan.[7]

Urban transport in Dushanbe: analysis of the current situation in the field of public transport

The share of the different modes of transport in the total volume of passenger traffic and in the passenger turnover of Dushanbe city is detailed in table 2.

Table 2 Characteristics of the share of municipal, departmental and private transport in the total volume of passenger traffic and in the passenger turnover of Dushanbe (2018)[8]

Mode of transport	Volume of traffic, million passengers	Share (per cent)	Passenger turnover, thousand passengers-km	Share (per cent)
Municipal Public transport	112.81	46.43	1 274.75	41.01
Departmental transport	21.38	8.79	288.84	9.29
Private transport	108.81	44.78	1 545.10	49.70
Other	1.07	1.80	0.90	0.90
In total	**243.0**	**100.00**	**3 108.69**	**100.00**

This table shows that the share of road transport represents 46.43 per cent of the total volume of passenger traffic, while departmental transport represents 8.79 per cent and private transport 44.78 per cent. In the total passenger turnover, their share are respectively 41.01 per cent; 9.29 per cent and 49.70 per cent. Private transport has therefore almost the same traffic volume as public transport.

One of the factors in favor of using car sharing and carpooling is the unreliable schedule of routes and the insufficient level of public transport service, which does not cover most areas adjacent to the city of Dushanbe. Another important factor that could justify the development of car sharing is the toll parking in the city of Dushanbe, which significantly restrains drivers from using their personal car.

[7] https://www.asiaplustj.info/en/news/tajikistan/economic/20230224/yandex-go-does-not-have-the-right-to-provide-even-dispatching-services-says-transport-ministry.

[8] According to the Statistical Yearbook for Dushanbe city.

Urban transport in Dushanbe: perspectives of evolution

Projects and plans for acquisitions related to urban transport for the city of Dushanbe

- **Through the World Bank (WB)[9]**

The World Bank, together with the Ministry of Transport of the Republic of Tajikistan and the executive body of state power of the city of Dushanbe, is developing a project on "Improving urban mobility and reorganization of the passenger transport network, optimization of routes and programs for the development of public transport in the city of Dushanbe".

The project started in March 2022 and is in the process of collecting data and preparing a report on public transport in Dushanbe.

In the short term, the project plans to conduct a comprehensive survey and study of the timing of the passenger route network in order to determine the movement patterns, supply and demand of the population for different modes of passenger transport, as well as to develop a strategy for the development of urban transport. Within the framework of their mission, representatives of the World Bank held a meeting with the State Unitary Enterprise (SUE) "Smart City", as well as with interested representatives in the field of the transport system, namely with the Transport Department of the Dushanbe City Hall, the Ministry of Transport of the Republic of Tajikistan, the State Public Institution "Dushanbe-nakliyet-hadamotrason", the company "Dushanbe City", and with the SUE "Bus-1", "Bus-2", "Bus-3" and "Trolleybus". Field research was carried out during the mission, which included visits to the bus operations center, and trips by bus, trolleybus, and minibus to identify passenger traffic.

- **From the State budget**

The road transport sector accounts for 0.14 per cent of the country GDP, where 37 per cent will be spent on renewing the rolling stock fleet, about 43 per cent on modernizing the sector by creating the necessary infrastructure for electric vehicles and more than 20 per cent on developing the logistics network.

The growth of the number of road passengers in Dushanbe, taking into account the planned high growth of population migration, gives grounds to envisage, in the long-term period, the creation of a trolleybus suburban line between the capital and Vahdat, Tursunzade and Somoni settlements. In the long-term period, as well as in the medium-term period, preferential loans will be envisaged for the purchase of passengers transport vehicles (table 3).

Table 3 Long-term Road Public Transport Development Programme (USD million)

Indicators	Funding Source	Years						Total
		2020	2021	2022	2023	2024	2025	
Creation of trolleybus fleet. traction network and substation	Funds raising	1.1	1.2	1.3	1.3	1.4	1.5	**7.8**
	Government funding	0.4	0.4	0.4	0.5	0.5	0.5	**2.7**
Procurement of motor vehicles	Own funds	0.5	0.5	0.5	0.5	0.5	0.5	**3.0**
Total		**2.0**	**2.1**	**2.2**	**2.3**	**2.4**	**2.5**	**13.5**

[9] http://dsc.tj/ru/2022/05/26/миссия-всемирного-банка-по-городской (in Russian).

The Master Transport Development Plan of the Republic of Tajikistan for the period up to 2025 is based on transport development forecast and aims to:

- providing infrastructure that minimizes overall transport costs;
- developing the rail, air and road sectors so that each serves more appropriate transport needs and provides high quality services at affordable prices;
- promoting Tajikistan as a regional center attracting tourists and transit traffic;
- promoting maximum use of the private sector services, with competition between operators being the driving force for efficiency, low prices and high-quality services.

This Master Plan has three important financial constraints:

- The difficulty of increasing the Government's contribution based on the sole existing revenue sources;
- The existence of external debt makes it difficult to obtain non-concessional loans (and even some concessional financing);
- The external borrowing is based on GDP growth.

Regarding domestic passenger transport, given that road transport is the most important mode, high priority will be given to investments that will reduce road transport costs and travel time.

The potential of car sharing and carpooling to reduce CO_2 emissions

Car sharing and carpooling have the same overall objective to reduce car ownership or, in case of countries/ cities where car ownership is low, to limit the growth of car ownership, by offering a car mobility service for those that need it, without the need to purchase and own an individual vehicle.

This objective of lower car ownership is achieved through two different mechanisms:

1. For carpooling, the average load factor (number of passengers per vehicle) of the vehicle is increased, with more people on-board the vehicle for any given trip.
2. For car sharing, the car is used more frequently, as one car is shared among different people that have access to it; the annual distance covered by the vehicle is increased.

Car sharing and car-pooling have several environmental and other types of co-benefits such as:

- Reduced congestion: with less cars on the road, road infrastructure is saturated more slowly, easing the flow of cars,
- Lower natural resources needed to build vehicles: material extraction is decreased with less vehicles being individually owned,
- Cost savings: owning individual vehicle is expensive, because of the costs associated with it (acquisition cost and all recurrent costs such as insurance, maintenance, parking, energy that are to partially or fully exempted when subscribing to car sharing or carpooling schemes).

Deployment and user-adoption of car sharing and carpooling schemes in a city or a country will impact the transport mode share in the given region; the potential CO_2 mitigation will depend on which modes of transport are being displaced for users of carpooling and car sharing schemes, and the importance of induced demand (trip that would not have been made without the car sharing/carpooling system).

Quantifying the CO_2 emissions reduction potential of car sharing schemes in Tajikistan

Tajikistan has a low vehicle ownership of around 50 vehicles per 1,0000 people and very limited data availability regarding the actual mode share.

This lack of data prevents the accurate calculation of the potential CO_2 emission reduction of a shift toward carpooling and car sharing in the countries and cities covered by this study. The study below is only for illustration purposes and does not necessarily reflect the situation in the country.

Nevertheless, following the available literature regarding mode shift and basic calculation using For Future Inland Transport Systems (ForFITS) methodology, some order of magnitude can be shown to indicate the likely potential for CO_2 emissions reduction for carpooling and car sharing schemes can be assessed.

1. Impact of car sharing schemes

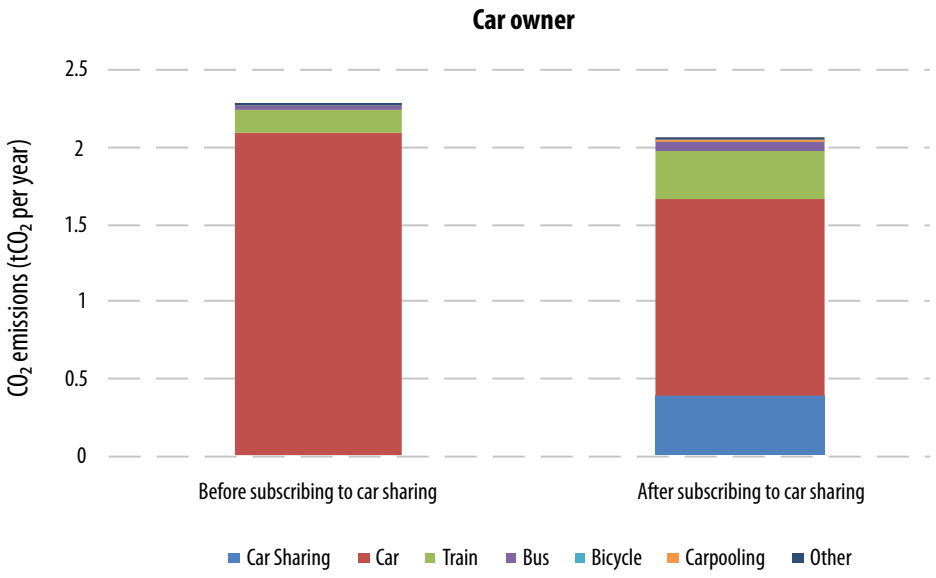
    a. Literature review

To quantify the CO_2 impacts of the private car and car sharing schemes, assumptions need to be made on the modal shift before and after the latter has been deployed, its level of adoption and the carbon intensity of each mode.

The data regarding the transport mode share in Tajikistan is limited. It shows a wide spectrum of modal share at the country level.

Available literature, such as Martin, E., Shaheen, S. (2016) or L. Amatuni et al. (2020) covers cities in developed countries, where car ownership is already high. Car-owning households that subscribe to a car sharing scheme decrease their annual GHG emissions by around 20 per cent (figure 1). Their CO_2 emissions decrease as they use more often lower carbon transport modes such as public transport and active modes (walking and cycling) (table 4), keeping overall annual mobility constant.

Figure 1 CO_2 emissions from transportation of average household – Before subscribing to car sharing/After subscribing to car sharing scheme



Source: Martin, E., Shaheen, S. (2016).

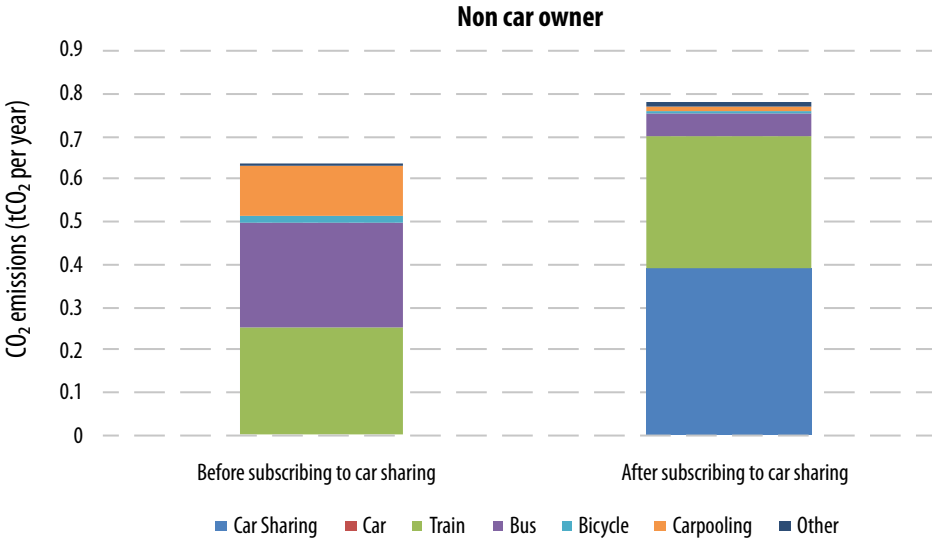
Table 4 Mode share from car-owning household before and after subscribing to car sharing scheme

	Annual distance (km)	
	Before subscribing to car sharing	After subscribing to car sharing
Car Sharing	0	1 850
Car	9 220	5 610
Train	1 431	3 069
Bus	140	299
Bicycle	105	225
Carpooling	35	75
Other	70	150
Total	11 000	11 278

Source: Martin, E., Shaheen, S. (2016).

Households that do not own a car and subscribe to a car sharing scheme are likely to increase their traffic activity and GHG emissions, as for them, a shared car would be more energy-intensive that any other modes they use regularly (public transport, carpooling). With an overall annual mobility kept at similar levels, overall CO_2 emissions could increase by around 20 per cent.

Figure 2 Non car owners – CO_2 emissions before subscribing to car sharing/after subscribing to car sharing

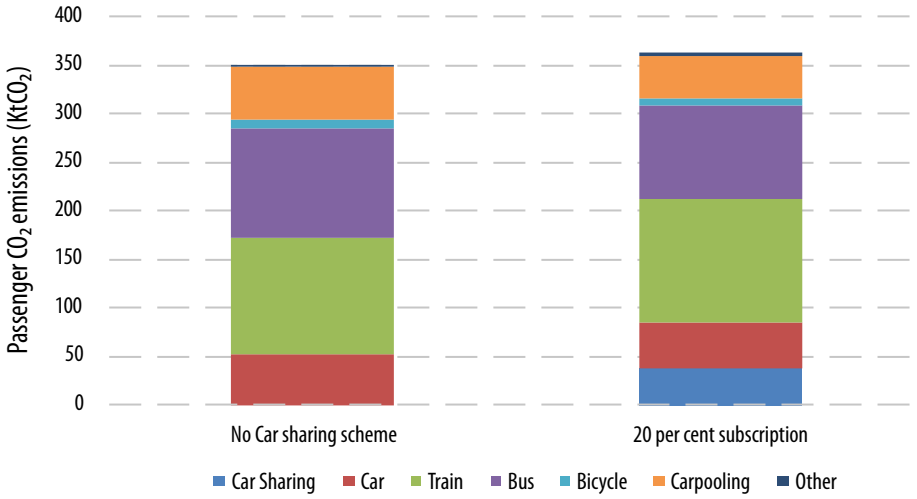


Source: author's elaboration based on Martin, E., Shaheen, S. (2016).

b. The case of Tajikistan

Assuming 20 per cent of the population in Tajikistan would subscribes to a car sharing scheme, (whether they are car owners or not), passenger transport GHG emissions would increase by about 3.5 per cent), as almost all subscribers would not have owned a car prior to registering to the car sharing scheme, which would not be compensated by the GHG emissions reduction from those who are owning a car.

Figure 3 Passenger CO_2 emissions depending on car sharing scheme subscription



Source: UNECE.

2. Impact of carpooling schemes

Long distance carpooling has been the most successful mode to date and global companies have developed a service offering an organized carpooling by putting drivers and passengers in contact through centralized websites. A recent study performed by the carpooling company BlaBlaCar and based on user surveys in 8 countries estimates that carpooling decreases CO_2 by 30 per cent. This study also details the alternative transport modes that would have been chosen if the carpooling offer would not have been there. The interesting insight from this study is that most drivers would still have taken their car (alone) if the carpooling scheme was not there.

In countries where car ownership is low, carpooling might not be the preferred choice as offer would be limited, and car owners (probably from the higher income part of society) are likely not to be willing to share their journey with others.

Daily commute carpooling has not been as successful to date, given the lower incentive for drivers and the alternative offers, such as public transport.

Recommendations

Car sharing and carpooling would yield higher CO_2 benefits in countries where individual car ownership is high and where car sharing /carpooling schemes would replace individual car trips.

To maximize potential CO_2 emissions reduction benefit, car sharing schemes should preferably target car owners, or household that consider buying a car, in order to provide an incentive to sell (or not replace) or to avoid buying a car. Car sharing schemes are more effective at reducing CO_2 emissions in cities, where alternative modes of transport are available.

Carpooling schemes should first focus on long distance journeys, between cities, given the higher incentives for both drivers and passengers, before getting deployed in urban areas.

Legal context related to road transport

Legal Context at the national level

Passengers road transport in Dushanbe is regulated by the following regulatory documents:

– Law of the Republic of Tajikistan of 29 November 2000, No. 22, "On Transport" (as amended by the Law of 28 December 2013, No. 1050) regulates the activities of carriers in all modes of transport;

– Charter of Road Transport of the Republic of Tajikistan of 30 December 2009, No. 696;

– Rules for the carriage of passengers and luggage and hand luggage by road in the Republic of Tajikistan approved by the order of the Minister of Transport and Communications of the Republic of Tajikistan of 20 July 2009, No. 10.

None of the listed documents contains any mention of car sharing and carpooling services, there is no regulation in these areas. The following types of transportation are subject to licensing:

– National (urban, suburban, intercity) and international transportation of passengers by road;

– Domestic and international transportation of goods by road.

Licenses for commercial activities are issued in accordance with the procedure established by the Law of the Republic of Tajikistan of 17 May 2004, No. 37, "On Licensing of Certain Types of Activities" and the Regulation "On the Specifics of Licensing of Certain Types of Activities" (approved by the Decree of the Government of the Republic of Tajikistan of 3 April 2007, No. 172). According to these documents, taxi transportation requires a state license, which is issued to legal entities and individual entrepreneurs.

In the Republic of Tajikistan, the "National Development Strategy for the Period up to 2030" (adopted by the Resolution of the Supreme Assembly of the Parliament of the country on 1 December 2016, No. 636):

- establishes priorities, including the comprehensive development of all modes of transport and the rationalization of the structure of the vehicle fleet and rolling stock;
- aims at the optimization of their operation to ensure the industrial and innovative development of the national economy and its adequation to the needs of the population.

Legal context at the local level (Dushanbe)

Currently, local authorities don't have published specific plans to introduce car sharing and carpooling.

To amend the local legislation, the initiative of the SUE "Dushanbe-nakliyet-hadamotrason" is needed. The SUE "Dushanbe-nakliyet-hadamotrason" submits the relevant package of documents for consideration by the Hukumat of the city of Dushanbe, which, in turn, considers this issue at a meeting of the relevant commission of the local parliament, and then, based on the results of this consultation, at the session of the Hukumat of the city of Dushanbe and of the SUE "Dushanbe-nakliyet-hadamotrason". If the local parliament supports the initiative, the updated rules can come into force.

Analysis of national and local legislation in the field of transport

There are no plans for the introduction of car sharing and carpooling in strategic and program documents at the national level. However, the Road Transport Code of the Republic of Tajikistan, which was approved by the Resolution of the Parliament of the Republic of Tajikistan of 2 April 2020, No. 1689, mentions "stimulating the introduction of new developments, the development of technologies and methods in the field of road transport". Moreover, the National Development Strategy of the Republic of Tajikistan until 2030, approved by the Decree of the President of the Republic of Tajikistan of 1 December 2016, No. 636, plans to develop environmentally sustainable public transport, including the compliance of vehicles with environmental standards and standards.[10]

According to the Code of Road Transport, the Development of Passenger and Luggage Transportation Plans support the establishment of key performance indicators for road transport services. The goal is to strengthen the level of quality provided by strategies and programs in the field of road transport, and to measure their achievements, on the basis of road transport standards and other regulatory legal acts of the Republic of Tajikistan.

To achieve this goal, it is necessary to implement the following tasks:

1. Providing the city with a sufficient amount of public transport;
2. Stimulating the transition of citizens to non-cash payment for public transport.

These tasks require the implementation of the following key measures:

(a) optimization of the route network of urban public transport;

(b) attracting partners and investors for the implementation of projects and programs aimed at improving the public transport system;

(c) improvement of the rules for the carriage of passengers by public transport in order to improve the quality of service and responsibility of carriers;

Stages and recommendations

To create a sustainable transport environment with appropriate policy guidance on the use of shared mobility solutions, it is necessary to undertake a number of actions and, at the local level, with the support and approval of the Hukumat of Dushanbe, to implement the legislative aspects. For this purpose, it is necessary to:

Assess the likelihood of introducing the concept of car sharing and carpooling in the legislative context

After amending the Laws of the Republic of Tajikistan "On Transport" and "On Road Transport" to add car sharing and carpooling services in their scope, subsidiary legislations could also be brought into line. It would be then necessary to amend the rules for the organization of passenger transportation by road in the Law of the Republic of Tajikistan "On Transport", in the Law of the Republic of Tajikistan "On Road Transport" and in the Code of Road Transport of the Republic of Tajikistan.[11]

[10] According to the National Center of legislation of Tajikistan, http://ncz.tj/content/закон-республики-таджикистан-об-обеспечении-экологической-безопасности-автомобильного (in Russian).

[11] According to the National Center of legislation of Tajikistan, http://ncl.tj/node/1083.

A working group creation and investment attraction

It is possible to promote the development of car sharing operator activities if there are stakeholders and sufficient funding. Given the current financial situation of the public authority and the lack of a plan to implement car sharing and carpooling initiatives and allocated funds, the allocation of funds by the public authority is unlikely. During the analyses and negotiations with various transport and logistics entities within the framework of this project, interest has been expressed by representatives of the Smart City project to define a working group (see the conclusion of this study for more details).

Establish monitoring of the results of the implemented activities

Monitoring the results of the regulations, measures and policies adopted is fundamental to ensure an effective use of the public resources mobilized for the implementation of car sharing and carpooling projects. Development targets must be defined and monitored, and the results of implemented pilot projects should be analysed. Planning is also necessary, therefore the identification of perspectives for the further sustainable development of shared mobility is encouraged.

Figure 4 Recommended steps for public authorities to develop car sharing and carpooling[12]

[12] "Strengthening the capacity of Central Asian countries to develop sustainable urban mobility policy on car sharing and carpooling initiatives", UNECE, 2020, https://unece.org/DAM/trans/publications/2020_CarSharing_E.pdf (English).

Recommended criteria and conditions for car sharing and carpooling operators (when applicable):

- Availability of a sufficient number of vehicles in the operator's fleet (not older than 3 years)
- Vehicles must comply with the legislation and regulations (dimensions, environmental class, etc.)
- Vehicles must be equipped with specific equipment (satellite navigation, internet connection)
- Documents proving that vehicles regularly undergo technical inspection and maintenance in accordance with national regulations and if possible UN rules
- Documents indicating the presence of a customer service (by telephone or through the operator smartphone application)
- Documents confirming the existence of established procedures for the protection of personal data of customers and guaranteeing their safety
- Third Party Liability Insurance (for each car) is essential
- The availability of free software that allows customers to book operator's cars
- Providing the city's traffic management system with data on the location of the operator's vehicles and their status of use
- Evidence of the company's good reputation status
- No arrears in payment of taxes, fees and other obligatory payments
- Presence of a registered office in the city of Dushanbe
- The absence of gross violations in the field of road safety, liquidation or bankruptcy procedures.

Conclusion

At the local level, the administration, with the support of public associations of the city of Dushanbe, could implement measures to create innovative solutions for urban mobility.

Thus, within the framework of this project, a meeting was held on 21 September 2022, with representatives of the Ministry of Transport, representatives of UNECE, as well as the SUE "Dushanbe–nakliyet–hadamotrason". Representatives of the Ministry of Transport and carrier companies noted the demand for car sharing and carpooling services. It is however necessary to note that in Dushanbe, the urban road infrastructure still needs to be improved to better accommodate the socio-economic development of the city in general and to facilitate the implementation of shared mobility in particular.

Proposals for the development of a policy for sustainable urban mobility fostering car sharing and carpooling services could be included in the concept of the State Unitary Enterprise (SUE) "Smart City".[13] The State Unitary Enterprise "Smart City" aims at increasing the efficiency of electronic services through information and communication technologies, ensuring the safety of citizens, included in the transport sector of the city. Its objective is to assess the prerequisites for the implementation of the decision of the Government of the Republic of Tajikistan of 1 March 2018, No. 78, on the "Program of socio-economic development of the city of Dushanbe for the period up to 2025". There is a possibility of further extension of this initiative until 2030. In this framework, this SUE could provide technical insights and legal support for the development of car sharing and carpooling services in Dushanbe.

[13] http://dsc.tj/en/about-us/.

Developing sustainable urban mobility policy on car sharing and carpooling initiatives Tajikistan

In the framework of a project on strengthening the capacity of Central Asian countries to develop sustainable urban mobility policy on car sharing and carpooling initiatives, a first study was published by UNECE, focusing on a possible emergence and development of shared mobility services in Kazakhstan, Kyrgyzstan, and Tajikistan. It provided guidelines considering the best practices related to car sharing and carpooling in the public and private sectors.

This publication presents the local context in Tajikistan related to urban transport and sustainable mobility, but also the legal aspects to consider for the development of car sharing and carpooling services in Dushanbe. It also provides a For Future Inland Transport Systems (ForFITS) assessment and gives recommendations on the setting up of car sharing and carpooling services in Dushanbe, based on discussions held with local and national stakeholders.

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