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River transport in Iraq and its impact on Iraq's economy

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Abstract: River transport trucks have been used in Europe since the early 1900s and are still commonly used in Germany, Austria, and Switzerland. They play an essential role in transportation around these areas by reducing traffic jams and emissions and carrying goods efficiently along urban riverfronts.

But a few recent studies suggest that these trucks could also release unsafe levels of pollutants into the air near industrial areas, causing respiratory issues for nearby residents and pollution problems for city streets. With this potential downside to this type of transport becoming more likely with increased usage, it seems like a better idea to switch over to alternative forms of transportation that could bring some great benefits to people living near rivers worldwide.

Land transport in Iraq is dominant, not because it is the most economical or the easiest and safest. This sector still has an infrastructure that has been established for many years, unlike river transport, which suffers from neglect and is not classified among the basic types of transport in Iraq. Therefore, in this research, we want to shed light on this type of transportation and explain its economic benefit and the extent of its contribution to helping and supporting the middle class in society.

Keywords: River transport, management, economy, transportation, investment.

1. Introduction:

Transport in Iraq is a wide-ranging list of infrastructures that include railways, ports, harbors, and waterways. Over the last two decades, Baghdad has been planning on establishing a Metro system. Although some tunnels have already been built, others are used for various purposes, such as shelters and hiding. In 2008, the Baghdad Metro began operating. On April 26, 2003, the first train to Basra since the fall of Saddam Hussein arrived. British troops planned to use the railway to transport humanitarian supplies. In 2011, the government of Iraq and Alstom signed an agreement to construct a high-speed rail link between Baghdad and Basra.

Advanced (1). The achievements in transportation and the establishment of a new social middle class in the 19th century created the preconditions for a smash in tourism. The international development of transport links, an increase in the professionalism of tourism providers and a fleetly advancing technological development in both transport capacity and management were accompanied by a change in consumer actions characterized by an increased appetite for distant places (2).

Airlines were among the first companies to create worldwide electronic networks, not only for selling and distribution but also for internal operation and perceptions purposes. Also, the other types of transport suppliers, auto settlements, railroads or the maritime assiduity fall into this order; they're all technologically. AutoNation settlements and railroads or the maritime assiduity fall into this order. They're all technologically .auto settlements and railroads or the maritime assiduity fall into this order; they're all technologically.

2. River transport of Iraq:

2.1. Tigersriver:

The Tigris River is a river that originates from the southeastern heights of the Anatolian plateau in Turkey and then enters the territory of the State of Iraq at the town of Fish Khabur and pours into the river a large group of tributaries and rivers spread in the regions of Turkey, Iran and Iraq. The Tigris River met the Euphrates River, also known as Qurna after His journey through the lands of Iraq, to be together with the Shatt

al-Arab, which flows into the Arabian Gulf. Still, the course of the Euphrates has changed at present, and it meets the Tigris River at the Karma area near Basra, and the length of the river course is about 1,718 km.

Five tributaries flow into the Tigris River after entering Iraqi territory: the Khabur, the Great Zab, the Little Zab, the Great, and the Diyala.

The Tigris River is one of the most important rivers in the Fertile Crescent. It has played a significant role in supplying many regions with fresh water for centuries, such as the cities and regions of Turkey, the Levant and Iraq. It is the second-largest river in West Asia. It is geographically surrounded by four countries, namely Iran, Iraq, Turkey, and Syria also forms a river system with the Euphrates River that surrounds Mesopotamia (Mesopotamia) in an area called the Fertile Crescent of a vital role in the days of drought and drought.

The importance of this river comes from many things, and the most important thing is the transport project which supports the economy of Iraq; for example, we can take the river to one of the most crowded cities in Iraq which is Baghdad; it has two parts which is the river divides it into karhk and Rasafa, I can show the population for people there

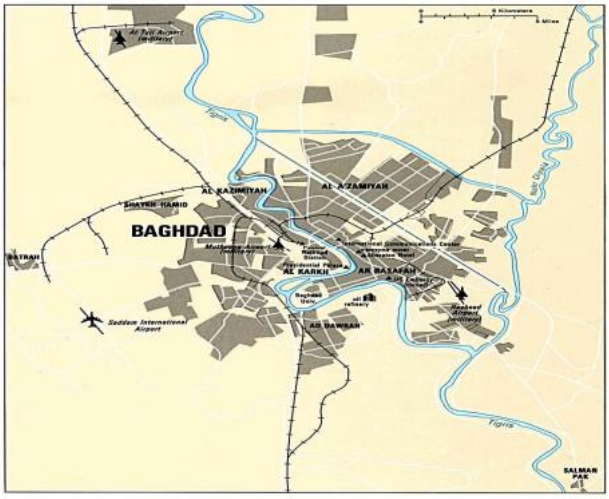

Figure 1: map of Tigers river in Baghdad city.
Source: Evaluation of Tigris River by water quality index Analysis using C++ program (3).

2011 population of	Sectors
843742	Rasafa
670639	Adamaia
1208869	Al-Sadr
869531	Baghdad aljadeda
361515	Karadah
3954296	Total

Table1: the population of people in Rasafa in Baghdad city
Source: The role of river transport in reducing congesting urban transport in the city of Baghdad as a case study (4).

As we can see in this table, the population of the safe part of Baghdad is enough to decide that the river transportation income will be extra income for the government instead of the primary income, which is the oil.

2011 population	Sectors
304612	Karkh
723101	AlKadimiah
523180	Almansour
978396	Aldora
2484914	Total

Table 2: The population of people in karkh in Baghdad city.
Source: The role of river transport in reducing congesting urban transport in the city of Baghdad as a case study.

Most transport networks, especially the streets. They are subject to the movement of a historical change a relatively less than those exposed to land use. For two reasons: -The first reason is that these services are essentially public property owned by the state while tracking most of the other privately owned uses. The second reason is that the services provided by these networks are fixed services are primarily to perform the function of transport while leading buildings and other uses multiple functions (5)

3. Water transport statistics:

River transport is a minor form of transport subject to change. Still, the requirements of the road require some modification, such as building channels or improving the existing natural waterways. Still, it is considered the safest and most stable of the other types of natural roads due to the possibility and ease of escaping from drowning due to the convergence of the two banks of the river compared to transporting at sea. River transport is free from dangers such as sudden and high floods and the speed of the water current in the course of the river, in addition to the frequent sedimentation that reduces the depth of the submersible in the study, which requires direct human intervention to introduce some changes. The following are essential features of inland river transport (6):

1- Ease of use and the ability of man to improve his paths and increase their energy by expanding river courses.
2- Land roads concerning internal transport.
3- Increasing the cargo of one ship, as it reaches in some boats to several hundred thousand tons in areas with a water draft of more than (10) meters.
4- Lower sea transportation costs compared to other means of transportation, as it is considered one of the cheapest means of transportation.
5- The ability to transport large-sized movables in which time and speed are not of great importance in transporting them.
6- River transport is the least negative means of transport on the environment.
7- Low driving force costs for traction and the excellent economy in fuel consumption.
8- Availability of local manufacturing capabilities for river units.
9- Low investment costs for river transport.
10- River transport relieves many of the burdens on the railways and road network, which need vast amounts of money annually for maintenance only due to the excessive loads of cars on highways.
11- The importance of river transport increases with its ability to link it with maritime transport by expanding the ports located at the mouths of rivers and linking it with land transport by constructing and equipping ports and connecting them to the road network.
12- Exceeding the increase in traffic densities on the roads. Depending on the Tigris and Euphrates rivers, which extend throughout the country.

عدد الركاب المنقولين بواسطة زوارق التكسي النهري لمحافظتي البصرة والنجف حسب الأشهر للشركة العامة للنقل البحري لسنة 2020

Number of passenger transport activity carried by river taxi boats for Basra and Najaf governorate by months of the State Company for Maritime Transport for the year 2020

Table (15) جدول (15)

Month	المجموع Total	النجف (مرسى الكوفة) AL- Najaf (Marina Kufa)	البصرة AL- Basra	الشهر
January	700	400	300	كانون الثاني
February	950	450	500	شباط
March	300	300	0	اذار
April	0	0	0	نيسان
May	0	0	0	أيار
June	0	0	0	حزيران
July	0	0	0	تموز
August	0	0	0	آب
September	0	0	0	ايلول
October	200	0	200	تشرين الاول
November	400	0	400	تشرين الثاني
December	400	0	400	كانون الاول
Grand total	2,950	1,150	1,800	المجموع الكلي

Source:Ministry of transport / State Company for Maritime Transport

المصدر : وزارة النقل / الشركة العامة للنقل البحري

Table 2: Number of passenger transport activity carried by river taxi boats for Basra and Najaf government by months of the state company of Maritime Transport for the year 2020.

Source: Water Transport Statistics Report 2020**.**

The Water Transport Statistics Report 2020(7) reports the number of passengers in only two cities of Iraq regarding this project and other benefits the river transport can provide the Iraqi economy.

As the previous information shows the population of the people between karhk and Rasafa, we can use a method to show us the economic statistic.

$$GC = a_0 + p + \sum_i a_i q_i$$

Source (8): The relationship between travel distance and fares, time costs and generalized costs in passenger transport.

The generalized journey costs, GC, are the sum of monetary expenses, p, and time costs, aiqi, where ai is the value of the time qi for time component i. Hence, the time component can be divided into several sub-categories (i's) to get a higher degree of detail in the analysis. In the following analysis, only time onboard the vehicle will be considered, and time components such as walking and waiting will be omitted, i.e. i = {onboard}. The money costs, p, are determined by the fare schemes given in Table 1 and time costs, aiqi are based on averaged observed values from time travel studies (8)

GC: the sum of the money cost

P: time cost

ai: the value of the time

qi: time component

Conclusions:

- Effective River transport system is essential for any economic growth.
- River transportation is a safe, quiet, virtually invisible transportation system and has the unique capability to carry tremendous amounts of cargo.
- River transportation is the environmental friend mode.
- River transport supports Iraq's economy.

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