

# The Dry Canal Project; An Overview for a Land-based New Connection over Iraq for the International Commercial Transportation

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## ABSTRACT

This academic report was written to shed light on the Iraqi future project (The Dry Canal); Essentially, Iraq is looking for a major goal, by take a benefit of its strategic geographical location in world's map, by accessing to maritime trade and the world. Iraqi government's desire is to build an integrated transport system, to link with regional countries through a huge plan called the Dry Canal Project that connects Asia to Europe, by using the Iraqi land as a bond for the global trade movement, and transforming its territory into a land route alternative to the Suez Canal. Consequently, it is possible to observe the massive size of infrastructure projects, which have been contracted between the government, and the biggest companies to rebuild the entire necessary infrastructure which belongs to that giant project. This study aims to review the general future shape of this project as the Iraqi officials planned and also according to their statements in the local press and the world, As the important step in the way to identify and set of all requirements, services and operational.

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## PREFACE

*T*he purpose of this document is to provide a detailed overview the general situation of each sector of the Transportation system Iraq, for the sake of identify the future Dry Canal project facilities needs for that huge project. This document serves as an academic document to be published and to be used as a chapter in my PhD thesis. I hope that it will also assist target groups of experts, designers and engineers, to build a common vision about the Dry Canal needs, and to become one of the driving forces for working for a better for this massive project's design in Iraq. The information contained in this document is provided only as general information. All figures presented in this document are after (2003) estimates unless otherwise noted.

## 1. INTRODUCTION

*T*his report has been written to showing up the importance of the Iraqi future project (The Dry Canal) in

reducing the distance traveled through Iraq to Turkey, Syria, Jordan, linking with Europe, and vice versa to Asia. Apart from all the neighboring countries, which were far from meeting with the West several times this distance points, calling on them to take advantage and contribute to the benefit of this ambitious project. China and other countries in Southeast Asia, are represents a blocks of the economic world significant, and has become many countries of the world on the other side will depend on what these countries are made, and so the world is facing an rapid commercial movement is ready to pass through Iraq, if the Al-Faw port is built and the joints of the success of transport through the Dry Canal project, which will make the way for the transfer of goods between the northern and southern parts of the world is more shorter [5].

Maritime transportation is the dominant supplier for the freight distribution of international shipping and development through the global maritime space. This space has its own continental blocs such as the profile of constraints and imperatives that it creates in terms of detours and passages. Sea routes are spaces a few kilometers wide trying to avoid interruptions of the land-road transportation. It is a function of the mandatory points of passage, which are almost all strategic places and physical constraints such as this coastline, the wind and sea currents, depth, and coral's reefs, ice or political boundaries in terms of sovereignty may hinder shipping circulation. The vast majority of the maritime trading movement taking place along the coasts and three continents already have limited river trade (Africa, Australia and Asia, excluding China) [9] (Fig.1).

The real challenges faced by Iraq in the maritime field, coming from the diversity of aims of the neighboring countries to invest Iraq's geographical location and achieve significant economic gains are immense and cannot be calculated, as well as the global trade volume by international huge port that originate in southern Iraq size, because they reach the place during short periods of time [5]. Economic improvements in that current period requires the necessity to work hard to construct the port of Faw, especially after the launch of Kuwait to build the port of Mubarak, which objectives to invest the issue of joining polar world through Iraq and growth of the economic gains that have been achieved at the expenditure of the local economy of Iraq, and this was evident through the construction of the port site and carries a negative impact on traffic in the ports of the Iraqi operation. [5] [6].

Iraqi trade expert Mr. Hilfi declaring "To facing all the marine trade challenges confront the country must work hard and fast to build the grand port of Al-Faw under the supervision of a private and special committees in this domain and the follow-up of the prime minister himself," and pointing to the need to take advantage of the giant ports experiences in the area, and from which was built in the countries of the world, including the Jebel Ali port experience of building in Dubai and conducted under the supervision of the highest levels of government, pointing out that the construction of the port of Al-Faw does not carry the state in construction costs, because that will be the responsibility of the global investment companies specialized in this regard, and is on the State materially designs and maps costs also, which are international companies through the study of the site carefully and then create the suitable mechanisms required for the construction of the port in the required shape [5] [6].

Also, Mr. Hilfi saying; that Iraq needs to construct a Dry Channel project connecting the ports in south of Iraq to neighboring countries in the North and vice versa, which will allow to run the commercial goods across the countries of the world, but this aim requiring quick access to proceed, the needs for highways, rail lines and new fast execution and high level capable of transporting large quantities of commodities between the poles of the world. In addition to expanding international highways should contains all services and facilities needs to run the project and he suggest to be carried out by international companies, he stressing that these methods will create new urban centers and many different kinds of stations on both sides of the project's roads, that excellent centers must offer the best services for significant trade in the country, and to whom intend to Iraqi ports [6], (Fig.2).

Therefore, it can be seen clearly that; to be possible recognizing all the facilities needs for the future Dry Canal project, this paper will review all the general essential information regarding to the transportation system in Iraq:

### 1.1 TRANSPORTATION IN IRAQ

**I**raq is bordered by 6 countries, Iran in the East, and Turkey to the North, Syria and Jordan to the West, and Saudi Arabia and Kuwait to the South and the Gulf region in the southeast of the country. Baghdad city (The capital) is an important point for all transport networks in Iraq, roads, trains and airlines. Baghdad international airport is the main in the country, situated in an area about 16 km west of the city. The main lines of the State-owned railway start in Baghdad. These connecting the capital with Basrah city and Umm Qasr, Al-Faw grand port in the South, Kirkuk, Erbil and Mosul in the North, and North-East, based in Anbar province in the West. Baghdad is the center of the regional road network, connects the city with highways with Turkey, Syria, Jordan, Iran, Kuwait, and Saudi Arabia too. Transport was one of the most dynamic sectors of the Iraqi economy since

1980s; it has been allocated a large share of the budget of the local development because it is important for the Government for several reasons. Logistics has become a critical factor in product for several Iraqi important mineral economies, petrol, gas etc. The Government also knows that transport bottlenecks can limit the industrial development more than any other factor (Fig.3). 100

### 1.1.1 HISTORICAL OVERVIEW

*I*raq despite the turmoil caused by the events that took place since 1980, and transport systems in the country are using the region's standards, in fact they are reasonable high, and includes transportation system in Iraq all the traveling kinds, and the road network has improved significantly since the 1950s, and more than four-fifths of the number of the different types of road are paved [2]. The main transportation system of the Republic of Iraq is already controlled by the government." Rail network in Iraq was opened in 1914, but now is dilapidated. Large parts of the communication system, such like traffic's signs and road's instructions are outdated and need an urgent renew. Recently, the Railways lines in operation contain; Baghdad-Basrah and Baghdad, Samarra, Mosul-Rabia, and Baghdad- Fallujah operation. These lines are actually using now a new system of wireless communications. Work is also under way on a double single-track for the line of Baghdad-Basrah, Baghdad-Mosul line and Hamam Alil -Rabia line [2]. The main lines include measuring metre-gauge line from Baghdad to Kirkuk and Arbil, and a standard-gauge from Baghdad to Mosul and Turkey. The southern standard-gauge path is linking Baghdad with Basrah and the ports of Um-Qasr. This line is linking Iraq with the Syrian Railways system. The international railways service has stopped during the political turmoil of the 1980s; it was not established with Syria until the year 2000 or with Turkey until 2001. As known, the Iraqi rail lines affected by looting during the "war in Iraq" mission and reforms required [1]

Since a long time, local was used rivers, lakes and canals by for transport in Iraq. River navigation for large vessels is difficult due to flooding, water diversion channels, and the shallow water. However, the Tigris River is navigable for ships to the city of Baghdad, and small craft can be traveled upstream to Mosul. Navigation on the Euphrates River confined in small boats and large pontoons that carry goods to downstream. International ships can reach the port of Basra city through the gulf. Even in the war between Iran and Iraq, and the trade in the country was dealing with the city of Basra, "the bulk of the trade in Iraq", but since then - and even more so since 1996 - Iraq has developed an outlet port of Umm-Qasr as an alternative port. It is connected with the city of Al-Zubair (50 km) across the Khor Al-Zubair water canal. A lot of goods belonging to the Iraqi Trade also pass through the port of Aqaba on the red sea in Jordan, and the movement of goods by road-trucks. But since 1999, and the goods become over the port of Latakia on the Mediterranean in Syria [1]. The national airline "Iraqi Airways," was founded in 1945, was the domestic air traffic relatively light in the outbreak of the "Gulf War". A ban on flights southern the latitude 32° north (since 1996 .33° North) and North 36° north (the so-called no-fly zones "areas of the air embargo") which was established after the war, and forced almost domestic air traffic to a halt until late 2000. There are international airports in Baghdad (the main entry point in the country) and in Basra city , as well as four regional airports in many large military fields [1].

### 1.1.2 CURENTLY GENERAL FEATURES

*T*he successive governments in Iraq understood that the safe system transport can play an important role in promoting regional integration and increase the presence of a central government's control in provinces and remote areas, for these motives, the government has started on an ambitious plan to develop and expand roads, railways, airports and river transport at one time. The main transportation axis in Iraq are almost juxtaposition northwest and southeast to the borders with Turkey over the city of Mosul in northern Iraq to Baghdad, then to Basrah city and the Gulf in the south. In the 1980s, efforts were ongoing to link Baghdad with the Euphrates River basin in the West. Iraq's infrastructure development is critical to the future of economic growth in the country after years of war and political randomness policy. Baghdad has allocated 16.7 billion\$ for investment in transport and communications sectors between 2010 and 2014, and 9 % of the \$ 186bn, budgeted for "National development Plan" for a period of 5 years [2].

#### 1.1.2.1 ROADS, LENGH AND CONDITION

*I*n Iraq, there are good-built highways connecting the country with neighboring States, mainly Kuwait and Jordan, the most extensive route network in Central, and southern of Iraq. The total length of paved roads in Iraq nearly doubled between 1979 and 1985, to 22,397 km, reinforced by 7800 km of unpaved roads and secondary feed. In 1987, the main roads project in Iraq a long slide of 1000 km of six-lane International highways connecting the Gulf countries with the Mediterranean eventually. For the reason that Iraq is a big country with total area more than 150,000,000 km<sup>2</sup>, about 25 million (2003 estimate), play a central role in the movements of people and goods. Most of the Iraq roads system (40, 6901 km) was developed during

the 1970s and 1980s, and if new construction occurred during the past decade.

The network includes an expressway system of 1,061 km, which consists of one six-lane highway connecting Basrah city in the south with the Jordanian border in the west via Baghdad city, and 10,000 km of border roads, which were developed as part of Iraq's military buildup in the 1980s. Roads accommodate 70 percent of all traffic volume in Iraq, and the expressway network alone accounts for 20 percent of all traffic. In Iraq, the road would stretch from the Jordanian border, then to the southern Iraqi towns, and finally to the borders with Kuwait. Construction was underway in the late 1980s. Plans were also being made for another highway, which would link Baghdad with the Turkish border via Kirkuk and Mosul. In the period (2005-2010) there was progress as well on a program to build 10,000 kilometers of rural roads (Fig.4).

#### 1.1.2.2 THE RAILWAY LINES

At independence, Iraq has only two separate railways lines and one measured the level of standard gauge, and the other one is meter gauge. Measuring the standard gauge line is runs to north from Baghdad through Mosul to the Syrian border, and eventually links with the Turkish railway system, and measuring the meter gauge line continued south from Baghdad to Basra. Because of these both systems are not compatible, Since 1960s and the cargo still moved by loading goods at Baghdad between the all parts of the country. The Soviet Union helped to expand the modular system to Basrah city southern Iraq, so, in 1977 almost 1129 km from 1589 km of Iraqi railways have already standard gauge.

By 1985 the total length of railroad lines had been extended to 2,029 kilometers, of which 1,496 kilometers were standard gauge. In 1985 the railroads were being traveled by 440 standard-gauge locomotives that moved 1.25 billion tons of freight per kilometer. A 252-kilometer line linking Kirkuk and Hadithah city was completed by contractors from the Republic of Korea (South Korea) in 1987 after five years of work. Built at a cost of US\$855 million, the line was designed to carry more than 1 million passengers and more than 3 million tons of freight annually.

In Iraq, the transportation system includes the maintenance and control centers and also, more than 30 bridges crossing the two great rivers "Tigris and the Euphrates." One of the future plans in Iraq is to triple passenger shipping line and to double its capabilities in the field of freight shipping. Opened for a distance of 550 km line, which was built by the Brazilian company stretching from Baghdad to the city of Qusaybah on the border with Syria, in the same year, also, it will be used.

In 1987, the Indian company was accomplished the Contract of the work on the line between the city of Musayyib and the city of Samarra, Iraq also plans to replace the entire rail routes between the city of Mosul in the North and the southern city of Basrah modern high-speed train lines, similarly to feed all the lines enter the ring of 112 km around the Baghdad city and improving bridges, charging stations and also stations for passengers. In addition, Iraq has leaded intermittent talks over the past years with Turkey, Kuwait and Saudi Arabia about the completion of the railway lines that connects the Gulf's countries with Europe (Fig.5).

#### 1.1.2.3 THE IRAQI PORTS

Iraq had a little port capacity at independence, reflecting the low level of foreign trade and the traditional country overland towards Syria and Turkey instead of toward the Gulf region. Since then, the Gulf port of Basrah was expanded several times, the latest built port at Umm-Qassr to alleviate pressure on the southern city of Basrah city. The 8 years of the Iraq-Iran war caused to reduce the port's activities in the 1980s. Shipping could resume after the war in Shatt al Arab canal after remove the explosives and the wreckage, which will take years. Despite long-standing Government interest in the developing of transport in the rivers of Tigris and Euphrates as major arteries for inland transport, little has been done in the late 1980s, mainly because of the sheer volume of this project. Dredging and navigation channels have been completed on several stretches of the Tigris River South of Baghdad, And in 1987 a river freight line opened by using river barges shipped between Baghdad and Amarah city. Iraq inquiry into the possibility of opening a full River Tigris between Mosul and Baghdad, as well as the possibility of opening a stretch of the Euphrates River between Hadithah city and Al-Qurnah city.

"In April of 2010, the Iraqi Ministry of transport has developed the foundation stone of the Al-Faw grand port project on the gulf southern the country near Basrah city ,who has by his designs the core container terminal length of 39 thousand meters, and a berth last a length of 2000 meters, as well as an arena for containers with an area of more than one million m<sup>2</sup>, and another arena of multi-purpose area of 600 thousand m<sup>2</sup>, with an absorptive capacity of the port 99 million tons annually, while total cost for the establishment of four billion and 400 million euros", and hopefully will connect that port with railway line

to connects the Gulf with Turkey and Northern Europe through the Iraq, and this project known as " The Dry Canal" [4] [5] [6]. This project would be the largest infrastructure project in Iraq over the last 30 years, Aims are to funded Iraqi and foreign countries, both public and private [6].

The main objectives of master plan are to remove wrecks and to build the grand port of Al-Faw, which when completed will be the largest in the country with cost of \$ 8 billion. "This project is part of an enormous vision called" The Dry Canal Project ", which allows the transfer of goods between North and South of the world quickly, safely and inexpensively. The Iraqi state ports company says; that the country's new port will be with the capacity of the facility of 99 million t/y [2]. Iraqi ports and must deal with other major developments in the Gulf region, such as those in Arabic Dubai, U.A.E. and Qatar and Salalah of the Sultanate of Oman, and Jeddah in Saudi Arabia, as well as a lack of investment. The total budget for ports activities in Iraq between 2004 and 2008 is not more than ID178bn (\$ 153m). It was only 30 per cent of the spent value [2] (Fig.6).

#### 1.1.2.4 AIRPORTS IN IRAQ

**T**here were two old international airports in Iraq at 1988, one in Baghdad city and one in Basrah city. In 1979, a French company has got a contract of 900 million \$ to build the new international airport in Baghdad. In 1985 this facility was implemented partially. Correspondingly it is updated on the Basrah's airport with runway of 4,000 meters and other facilities at a cost of more than us \$ 400 million. The third international airport in the city was planned to be built in Mosul city in the North. In 2001, Iraq had more than 108 airports and airstrips, but the vast majority of them under the military control. There are two international airports in Baghdad and Basra, the major domestic airports in Mosul, Kirkuk and Erbil. All airports have used joint civil-military installations design.

While all large airports have suffered from neglect and lack of maintenance and spare parts, and a limited amount of battle damage over the past 13 years. Most electromechanical systems had expired, and none of the airports compliant with standards of the International Civil Aviation Organization (ICAO) or capable of supporting air operations [7]. The Iraqi public institution "Iraqi Airways (IAC)" was flying only for domestic operation in 1988. The company was founded in 1945. In 1987, the fleet included Soviet-made cargo planes flying Antonov and Ilyushin thirty-five and fourteen Boeing passenger jets, as well as smaller aircraft and VIP aircraft jets too. Iraqi aviation Company" Iraqi airways' provided its services in all parts of the Mediterranean region, Middle East, and Europe, as well as to other countries such like the Brazil and the Far East. In 1987, the privatization decree of "IAC" had announced. In other hand, two new projects that will be created instead of Iraqi Airways commercially as national airline, the national company of "aviation services" to provide aircraft and airports. The shares will be sold to the public, and the government will retain a minority stake (Fig.7).

Although, the airline industry and airports in the country has been developed more than other sectors in Iraqi transportation system, which needs also a serious requires considerable investment. Iraq currently operates six international airports, located in the provincial areas of Baghdad, Mosul, Basra, Erbil, Najaf, and Sulaimaniyah. Erbil airport was already expanded, and 50bn-worth of plans is toke place for renew of Baghdad airport [2]. The French consultancy is currently reviewing the master plan for the airport in Mosul and Baghdad and Basrah. These covers systems include rehabilitation of buildings at the Baghdad international airport, and renew station at Basra airport, the expansion of runway and new terminal for passengers, also carrying out the site survey for the new airport in the city of Dohuk [2]. There are also plans to construct the "Euphrates International Airport" between Karbala and Najaf. This is to meet the needs of millions of religious tourists who visit the area each year. Existing infrastructure in Karbala and Najaf were struggling to absorb these numbers [2].

### 1.2 IRAQI DRY CANAL PROFILE

**I**raqi leaders have a larger vision called "The Dry Canal project" to transport goods between the North and South of the world quickly, safely and inexpensively. Road and rail schemes should be planned to run this project in Iraq could change the ordinary shape on the regional trade. In short: Shipments (Cargo) coming across the Gulf will be loaded in trains and trucks from the Iraqi Grand port of Al-Faw Southern of the country, and then will travel across the country to Turkey and then to Europe. This would give shippers companies an alternative to traditional but no longer route around the Arabian Peninsula, up through the Suez Canal of Egypt.

Iraq is a very rich country and has a lot of potential and natural resources, rivers and fertile land and holy shrines. Iraq is considered as the "Cradle of civilization" in the region. The plans will address the goals of development the capacity of the Iraqi transport and network integration and security as well as enhancing development cargo contribution of this sector to the gross domestic product [2]. Iraq must upgrade the Highways and railways networks provide adequate support for the planned mega-projects. "A near total cessation of railroad activities after the 2003 US invasion, along with reliance on the road network to transport cargo, has

further burdened the network. The total length of Iraq's roads, excluding municipalities and those found in Baghdad, is about 48,000 kilometers. This comprises 1,084km of highways, 11,000km of arterial roads, 10,000km of rural roads, 11,000km of border roads and 15,200km of secondary roads"[2].

This is not enough, especially with respect to rural roads. In accordance with international standards, and require every 100 people in the km need 1 km of public roads in this area; Road's density in Iraq stands at 0.18 km sq.km "currently, it's impossible to know exactly how many kilometers of roads that will be built under the new planned master plan, Amer A.Saeed, President of the project management (Ministry of construction and housing) says; "It depends on the output of the study we will finance the project accordingly". Estimating the scope of the rehabilitation of the road also depends on the results of the study. What is clear is that the initial efforts would focus on improving the situation of the existing roads network. Authorities will consider that the expansion of services for the new roads is the first step in the project, including highways and bypass roads, finally, linking new urban centers in the country and reducing congestion in large cities [2].

In 2020, it could be a challenge in the case of the Suez Canal, the busiest trade connection with more roads in the region, a series of regional rail line connects to Europe via ancient trade routes through Iraq to Turkey and Syria. With the improvement of the security situation in Iraq, Baghdad city is beginning to formulate a new long-term development plans in the country, as well as sectors of the oil and gas transmission, it is a priority for the government. Baghdad plans to invest heavily in improving the transport infrastructure and logistics, with the railways and Highways in the heart of its own plans [10]. Moreover, the grand port of Al-Faw is an ambitious project for the Iraqi government, which has plans to make it one of the world's largest 12 ports in contact with the rail to neighboring countries such as Turkey to Europe and with Syria and Jordan to the Mediterranean Sea. [6] [8].

Furthermore, they may have a role in the economic prosperity that was sought by the country, in fact, the investment on the geographical location of Iraq is important. Hence, this project represents a link between the North and the South, where the shortest path through Iraq, which created competition to build ports near the Iraqi border. Anyway, the task is enormous and many doubts that Iraq has the capacity to do so. But years of living with war and a crumbling infrastructure the country means very little to lose and much to gain (Fig.8).

## 2. MAIN MARITIME SHIPPING ROUTES

**T**he international maritime routes have to pass through specific sites corresponding to lanes and headers and Straits. Generally, these roads are situated between major industrial regions such as Western Europe, North America and East Asia, where it is an effective system for container trade is in place. The importance of these large industrial areas and consumer markets are organizing commodity exchange semi-finished and finished commodities. Also, include the main roads flows of raw materials, namely metals, grain and some food products (coffee, cocoa and sugar), and most importantly petrol. The strategic location of petrol and mineral resources shapes the maritime route for bulks because they represent the most movable goods and the most transported commodities. For example, being shipped more than 30 million barrels per day in all parts of the world [9] but, in the case of dry road (Or the Dry canal), the situation is different. There are potentially an infinite number of shipping lines that can be used for trading, but the global system configuration is relatively simple. The main axis for international trade is the corridor connecting North America, Europe, Asia and the Pacific through the Suez Canal and the Strait of Malacca and the Panama Canal [9].

Sea-Routes are a function of compulsory traffic line and passages, which are strategic locations, physical limitations areas (coasts, wind, currents, depth, reefs, ice) and political boundaries. As a result, the sea-routes draw arcs on the surface of the earth water as maritime international transport between continents trying to track distance great circle. The main shipping lanes to those that support the flow of commercial shipping service most major markets. Secondary navigation lanes are mostly of links between small markets [9] (Fig.9).

Partly because of physiography, specific locations of geopolitics play a strategic role for business in the global sea-routes networks. They are named as strategic corridors and can be classified in two main categories:

- The main corridors are most important and without them there would be alternatives to shipping cost effective limited, seriously affecting global trade. Among these are the Panama Canal and the Suez Canal and the Strait of Hormuz and the Straits of Malacca, and key sites in world trade for goods and commodities [9].
- Secondary corridors support the maritime routes that have alternatives, but still involve notable detour. These include Magellan passages, as the Straits of Dover and Taiwan [9].

The users of the Dry Canals, as constructed or under consideration, They called the dry channels because they

duplicate the role of regular channels, implying that the relatively short corridors infrastructure for railways, Highways and also pipelines linking ports where goods are shipped. Several Dry Canals began as a Portage routes to be discontinued as they have lost competitiveness, while others had been completed with the channel, as in the case of Panama. The main disadvantage in Dry canals is the load break at the both ends, which increases costs and delays, as well as limited economies of scale on road. Still, they represent routing options that can incite national imports and exports and developing the logistics activities. In any case, this imprint on regional development is much less evident in channels, because they are simply points of traffic [9].

### CONCLUSIONS AND RECOMMENDATIONS

**J**oining the economies of the world by the future dry Canal project, Iraq must begin the hard and enormous work by: Renewing , modernizing and reforming the entire infrastructure for transportation in the country(highways, railways, airports, ports, and build all the facilities necessary to insure the suitable running for this project on Earth, such like (Urban centers contain different complexes for maintenance , commerce, entertainment complexes, checkpoints, housing and etc.) and complete the construction of the port of Al- Faw on the Persian Gulf South of Iraq as a key step in creating the Dry Canal project. The Grad Canal Al-Faw ensure significant economic benefits, not only for Iraq, but for all countries in the region as well as the services offered by the all niches, especially after high global crude petrol prices and their impact on international transport prices, which makes world trade towards the nearest and cheapest route and that only by the destination of the port of Al-Faw, through the territory of Iraq towards Turkey, Syria, Jordan, and then towards South-East Asia and vice versa.

This report has identified that the main recommendations can be drawn is that one of the objectives of the Dry Canal Project in Iraq; is to improve road transport connectivity and safety on selected road sections along expressway one and the north-middle-south and the middle-east transport corridor in the country. The Dry Canal project should be supported by a grouping of:

- A. Strategic infrastructure investments and construction, for transport corridors improvements.
- B. Institutional strengthening and capacity building in the transport sector.
- C. Skills and technology development in domains of project management, monitoring and control.

Finally, the challenges with executing major projects across Iraq's transport sector are well documented. In the long term, Iraq needs to privatize public transportation systems. Executing the many planned transport projects will require both expertise and funding from the private sector, but whether this will be forthcoming remains indeterminate yet.

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**Fig.1 Iraq in World's Map**



**Fig.2 Iraq Geographical Position**



Fig.3 Fig3 Iraq's Map



Fig.4 Expressways in Iraq



Fig.5 Iraqi Railways Routes



Fig.6 Al-Faw Grand Port



**Fig.7 Baghdad International Airport Extension Project**



**Fig.8 Dry Canal Map**



**Fig.9 Main Maritime Shipping Routes**

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