

## ***Jask-Mashhad Freeway; Revivalist of the Eastern Half of Iran and Makoran coast***

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### **Abstract**

This article studies the benefits of the Jask-Mashhad freeway on the revival of the eastern half of Iran. The purpose of this article is to explain the necessity of implementing this mega project. Freeways are one of the most significant transportation facilities, providing rapid, safe, and inexpensive road access to all sections of the country, particularly for goods transit and tourism growth. A glance at the country's freeway map reveals that there are no freeways in the eastern half of the country, and none are planned for the future by the Ministry of Roads. Transportation infrastructure is a critical component of population concentration and land improvement. This freeway, with an estimated length of 1200 kilometers, a budget of around \$2 billion, and a construction time of 8 years, has the potential to significantly alter the livelihood, economics, and population of eastern half of Iran. This freeway, which links the landlocked northern countries with the neighboring countries of Iran, the Indian subcontinent, and East Asia, can handle 15-20 million passengers and tourists per year, as well as 15–25 million vehicles (cars, trailers, tankers, and trucks). Presently, around 20 million people reside along the course of this highway; if the freeway is completed, this number would increase to more than 40 million. Furthermore, in the 25-year view (until 2045), this freeway will play a significant role in the north-south corridor, regeneration of ports on the Oman Sea's border, and achievement of sea oriented development.

**Keywords:** Mashhad Jask Freeway, land use planning, Makoran Beaches, Sea Oriented Development, Transit, Tourism.

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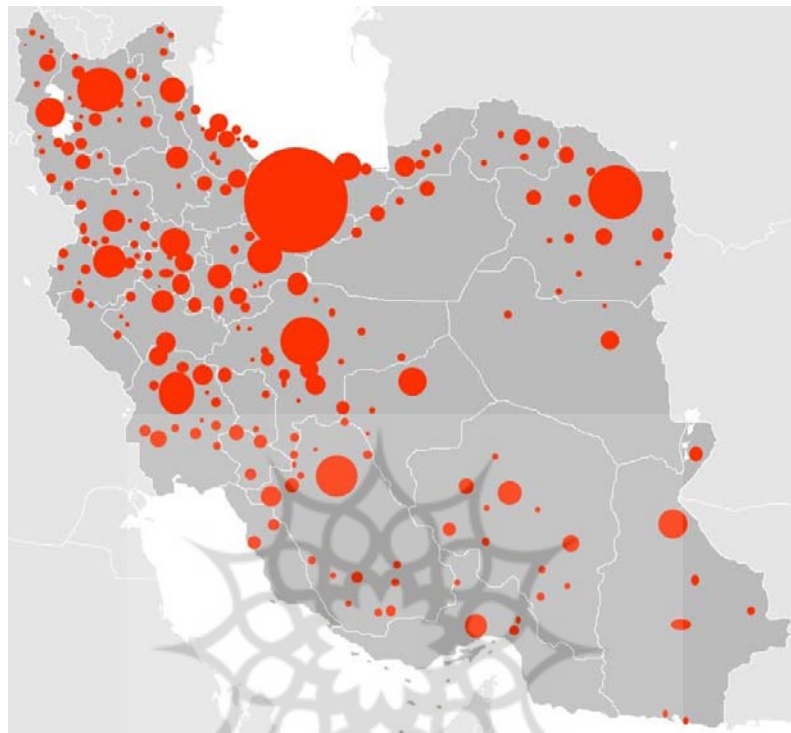
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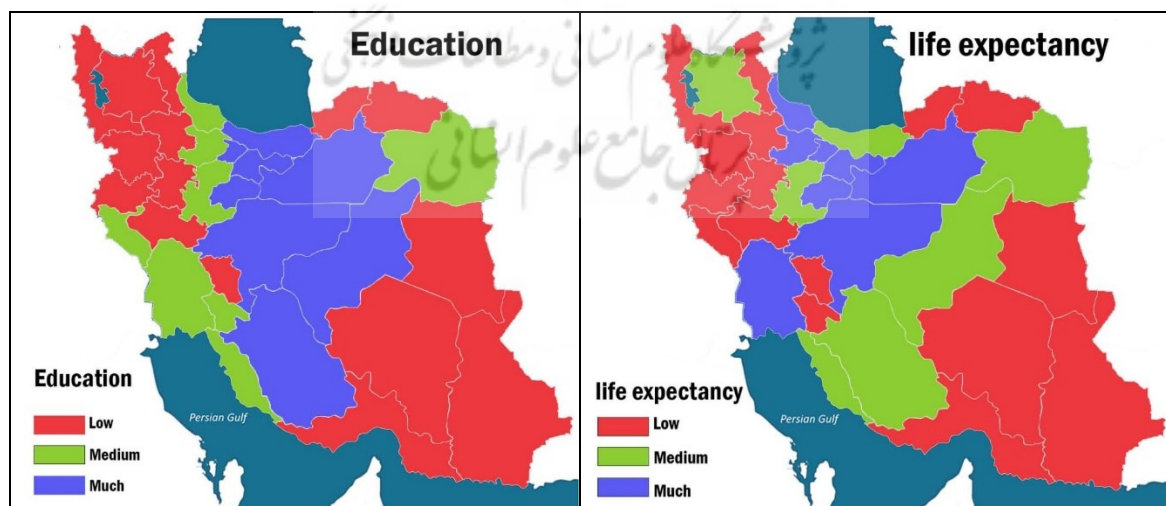
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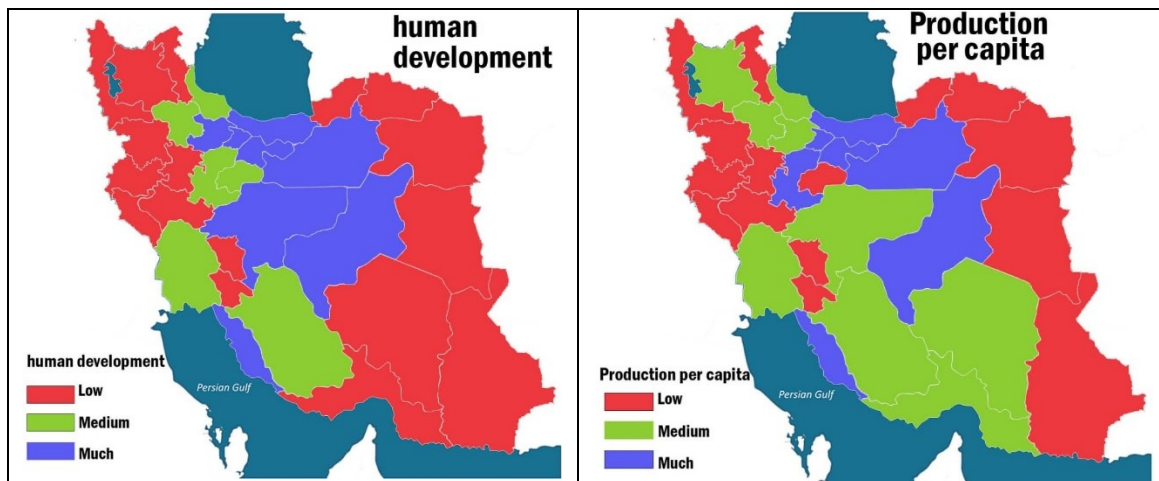
## **Introduction**

It can be observed that the eastern half of Iran is less developed than the northern and western regions of Iran by comparing the population maps of the country (Figure 1-a) and the distribution map of the country's development indicators (Figure 1-b). In a sizable portion of the country's eastern half, which is mostly deserted and has the weakest development indices, there is neither a city nor even a village (Iran's 10th-grade geography book, March 2019 ). The desert and scarcity of water in these places are contributing factors, but the primary issue is the dangerous and difficult road access to these areas. This explains why the country's eastern half has never been able to take advantage of three significant advantages for development: 1) the presence of Makoran beaches to the south of these locations to draw tourists to the stunning and magnificent ocean beaches 2) the presence of Mashhad (in the north of this region) as a major tourist center in the northeast of the country (with 25 million domestic and foreign travelers and tourists per year), such that if only trips to the eastern half of the country (Hormozgan, Sistan and Baluchistan, Kerman, Yazd, South Khorasan, and Razavi Khorasan - with a population of 20 million people) are made through this axis, it will result in the economic revitalization of current communities along this path as well as the formation of new cities. 3) The importance of the North-South corridor in connecting landlocked countries like Afghanistan, Turkmenistan, and Central Asian nations with the ocean as a supplement to international travel. Merely utilizing these three natural advantages might drastically change the economics, population, and security of the country's eastern areas (Zaki, Ahmadi, Abbasi Shoazi, & Adibnia, 2020).



A- Population distribution in Iran: The Makoran coastlines and the eastern part of the country are essentially unpopulated





B- The distribution of development indicators in the country - the eastern half of the country has one of the worst conditions in Iran.

Figure 2- Population distribution and development indices in Iran (School Book: Iran's 10th-grade geography book, (1400-1401))

Presently, there are three distinct routes from Jask (in the center of the Makoran coast) to Mashhad (Figure 2), which is around 1,600-1,700 kilometers (karnaval, n.d.), and owing to the difficult and meandering character of this route, the duration of the continuous travel is about 20 hours without stopping. Meanwhile, if a family travels this route with a stop in between, the travel duration will be roughly 28–30 hours. However, if a freeway is developed from Jask to Mashhad, the access route would be decreased to around 1200 kilometers, and the continuous journey duration will be lowered to 10-12 hours, which is taken into consideration. Relaxing along the way, the trip duration will be roughly 16 hours, halving the travel time. The air temperature is minus 5 degrees at the beginning of this highway in Mashhad during the winter and positive 25 degrees at the end of the highway in Chabahar. A vision that might make Makoran a popular tourist destination for Iranian families and even Eurasian nations during Iran's winter seasons is the idea of a motorway with a temperature differential of 30 degrees between its beginning and end. It is to be hoped that under these circumstances, Iranian families would include a trip to the southern shores in their travel plans and that businesspeople and investors would be open to doing business there as well. One of the benefits of building freeways in these locations is that most of the properties are uncontested, so there is no need to purchase property from genuine and





legal owners (Dehghan Morteza, 2019). Furthermore, by connecting this freeway to Chabahar port and border cities like Dogharon, Sarkhs, and Bajgiran, the international and transit value of this road has grown considerably, increasing its economic rationale (Zare, 2011). In such a way that obtaining traffic tolls is expected to return the investment in less than 5 years. It is impossible to shout the phrase "developing an area" if the access routes to that region are extremely rough, lengthy, hazardous, unsafe, and unsupported (Melabi Karbkandi & Kefili, 2019). If the freeway from Haram to Haram (Qom to Mashhad) is built, it will be feasible to link it from Jask to one of the cities located on its route, such as Neishabur or Sabzevar, reducing the length of the road and the needed investment. It can help people traveling from the north to the south (or vice versa) and from the east to the west of the country (and vice versa). As a result of the absence of sufficient transportation infrastructure to the Makoran beaches, Iran has been unable to capitalize on its best chance to accelerate "sea-oriented development" through this "hidden gem" (Al-Safi, 2013; Hosseini Erani & Qazi Andror, 2019). According to the common standard of developed countries, at least 1 million people can be settled on every 100 kilometers of coast, which means that on the 850 kilometers of Makoran's beaches, there is a minimum capacity of 8 million people, and now the Iranian authorities are planning to settle 5 million people on these beaches.

Maybe it is surprising that almost 800,000 people live along Makoran's coastline (530,000 in Bandar Abbas, 210,000 in Chabahar, 45,000 in Jask, and 40,000 in other settlements) (Melabi Karbkandi & Kefili, 2019). On the other hand, given Iran's drought difficulties, policymaking to relocate the people to the beaches seems the most logical option.

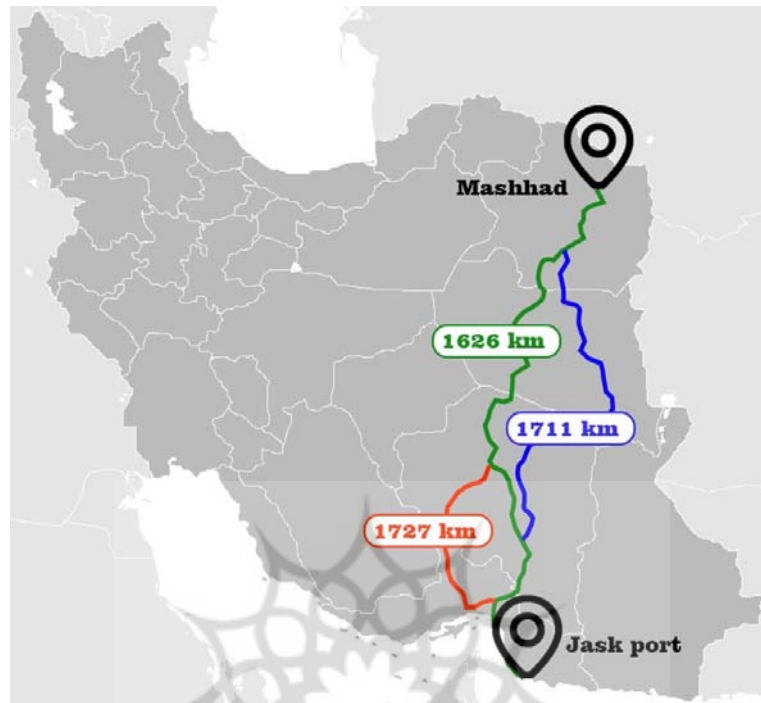


Figure 2- The present map of the three access routes from Jask to Mashhad (karnaval, n.d.)

### **1. The tourist miracle in producing jobs in the eastern and Makoran areas**

The conversion of these places has the potential to produce a significant shift in the economy of Iran and the execution of "sea-oriented development," but no noticeable difference has been detected in these beaches in comparison to the past. Since 2008, one of the top priorities of the leadership has been increasing the million population and overall development of Makoran beaches. There has always been discussion about how to settle the 5 million-person population in these places, which has not been very effective thus far. One of the most fundamental problems has been a lack of knowledge and understanding about the miracle of tourism in producing jobs in these communities among the managers and planners in these areas (wikipedia,Tourism, n.d.). A glance at the facts and numbers on employment creation in the investment section demonstrates the significance of this. For example, for every million dollars invested, 20



jobs are created in the construction industry, 14 jobs in manufacturing, and around 10 employment in energy, refineries, and petrochemicals (due to the high cost of this industry). Trade and buying and selling provide 19 jobs per million dollars, whereas all industrial, service, and agricultural jobs generate 17 jobs on average. Currently, the tourist industry is a major surprise: for every million dollars spent on tourism, 22 to 35 jobs are produced since it comprises a lot of micro, spontaneous, and seasonal employment (Wikipedia, Tourism, n.d.; Elighasht, 2019 October 7). This indicates that if we focus on energy, refineries, and petrochemicals along the Makoran coast, we will have produced around 10 jobs for every million dollars invested, but the same investment will create 35 jobs in the tourist sector. (3.5 times). Imagine that the target setting is to develop a population of 5 million people in these places in 10 years (until 1410), and according to the culture of the region, each family is supposed to have an average of 5 members. It entails creating one million jobs to accommodate five million people. If the energy industry is the focus, 100 billion dollars of investment are required within 10 years (that is, 10 billion dollars each year), which is a significant and unattainable number. If one million jobs (for a population of five million) are focused on tourism, with 35 jobs for one million dollars, the budget must be less than 30 billion dollars in ten years (3 billion per year), which is more logical and practical. It is more reachable since a portion of it is supported by small and big capitals from the private and cooperative sectors, rather than only the government budget and huge foreign investment. Sustainable employment should be a mix of different vocations, but excluding tourism from the employment portfolio of a virgin territory like Makoran is a severe mistake. The expansion of tourism in these locations may alter the perspectives of both small and major investors. The reality is that the Iranian people's perception of Iran's eastern and southeastern regions is currently negative and associated with the concept of insecurity, and as a result, investors (particularly in the tourism sector) are not showing interest in those regions, which, of course, will change as the economy improves. Upon visiting these locations, the sense of insecurity vanishes. About one in every hundred Iranian households has never visited the Oman Sea. To begin the growth of tourism, the government should first take responsibility and provide infrastructure so

that once travel to these locations becomes frequent, the private sector will be activated naturally. Similarly, the administration has done similar to steer Nowruz travels to the combat zones in the south, which has proven somewhat successful.

### **3. The country's freeway network; fulfillment of a long-forgotten requirement**

Unfortunately, there is no priority for access to Iran's significant ports, as well as the beaches of Makoran and the country's eastern half, on the country's present road map. The map below (Figure 3) is the country's final freeway map (The country's road management center, n.d.). As is obvious, there are almost no freeways in the eastern half of the country, and even in the Ministry of Roads and Urban Development's plans for the next 20 years, there are no freeways along the coast of Makoran and no freeway to link up essential ports like Chabahar and Jask to the center of the country and border regions in the northern part of the country! That indicates that the present road access to the east and southeast of the country is still risky, unsafe, inconvenient, and lengthy.

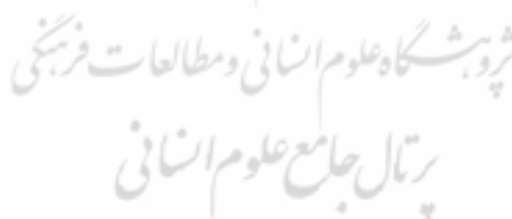






Figure 3- It illustrates the present situation of the freeway map of Iran. There is now no freeway in the eastern portion of the country!

Unfortunately, there has not been a balanced distribution of infrastructure facilities around the country in recent decades, or even before the revolution, to revitalize the eastern areas and southern coasts (Qolipour Moghadam, Ismaili, & Pikani, 1401). The country's freeway map, which is frequently centered in the western and northern parts of the country, is one of its manifestations. The only option to overcome these historical setbacks is to prioritize revitalizing the Makoran coast and the increase in Iran's transit revenue described in earlier publications like the land preparation plan with a 25-year vision (until 2045) and the maritime-oriented development document (*The Islamic Council Research Center, 1400*; Matalabi Karbkandi & Zare Zardini, 1400). The highway network is depicted schematically in Figure 4, with freeways running along the entire southern and northern coastlines and connecting all of Iran's ports to border locations. Furthermore, this highway network allows access to the country's motorway network from any place in Iran, with a maximum distance of 200

kilometers. The country's freeway network must be achieved in the 25-year vision of the land development plan, and all key Iranian ports must be connected to border terminals by freeways and railroads to enhance transit income. In this scenario, the country's transit revenue would increase and Iran cannot be removed from the east-west and north-south corridors (Barati, Ahmadi, & Zarei, 1400). Also, because private automobiles can visit these locations more readily, the tourism income of the eastern and southern beaches will be more equitable and balanced.

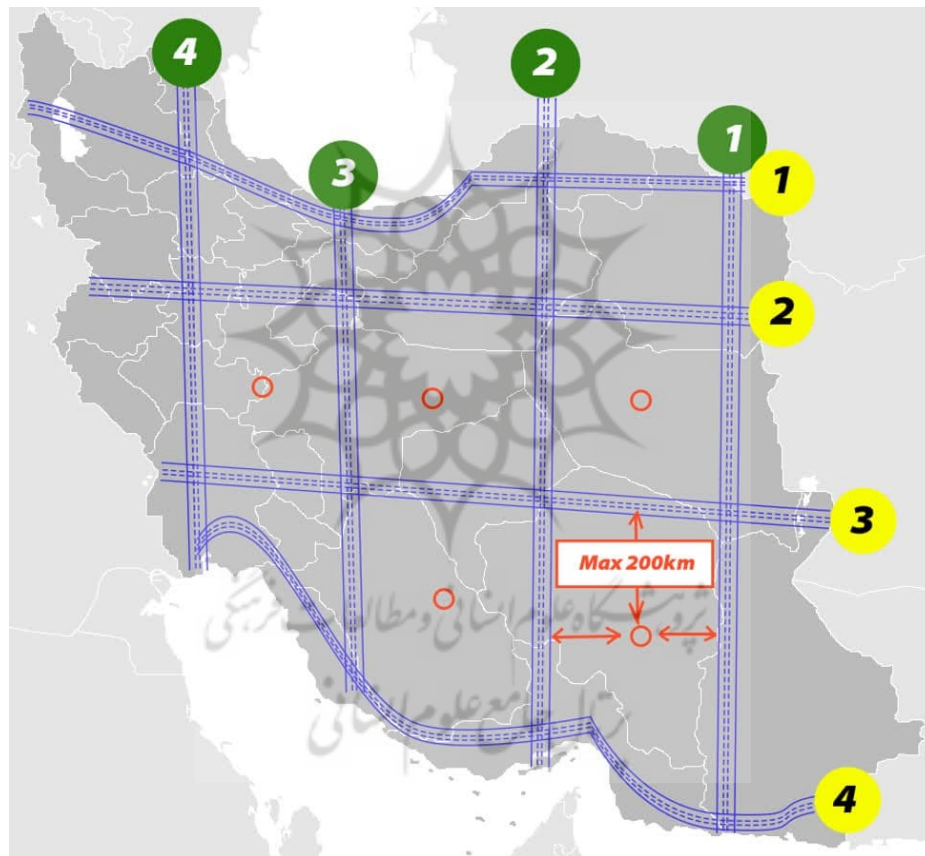


Figure 4- Schematic layout of the country's ideal freeway network, to provide equitable access to all sections of the country and optimize population and facilities.



#### **4. The impact of the freeway on improving the safety of the eastern regions of the country**

The lack of balanced and homogenous development has produced severe security issues in the country, such as the issuing of separatist slogans in the Sistan area and fueling the split between Shiites and Sunnis, which is often driven by acute livelihood problems and hardship. Regions that are sparsely inhabited and have a low quality of life are ideal for separatist and wicked group propaganda aimed at destroying the long-standing cooperation between Sunni brothers and Shiites. In general, unpopulated border areas attract criminals and gangs. As a result, from a security standpoint, the population must be concentrated more in Makoran's eastern districts and along its beaches. This is an extremely crucial problem in terms of foreign adversaries' dominance. When the borders and coasts of a country are deserted, it is much simpler to occupy and march into the center of the country, whereas the population of these places serves as the first line of defense against the foreign adversary. The agonizing experience of Iran's quick conquest during World War II will never be forgotten. The Jask-Mashhad freeway improves security in this area in various ways: 1) an increase in traffic 2) an increase in the number of traffic cops and checkpoints on the road 3) Growth in new cities and villages surrounding the motorway, as well as population growth 4) Raising employment and income for indigenous peoples in the eastern areas, as well as increasing their standard of living, which will reduce crime, smuggling, and the appeal of separatist movements.

#### **5. The reason for locating the start of the freeway from Jask**

The whole focus of growth and investment on the Makoran coast should not be primarily on Chabahar, because this will undoubtedly lead to the development of one point and the freeing of the Makoran shore, which is utterly undesirable from the standpoint of land development. Between Bandar Abbas and Chabahar, there must be several significant cities with comprehensive infrastructure and accessible and rapid road connections, such as Bandar Jask (Figure 5). The 800 kilometers between Bandar Abbas

and Chabahar should not be left without even a large and thriving city. The following are some of the reasons why this is required: 1) Anyone planning to visit Makoran beaches would have better access to these regions. Chabahar is located on the eastern end of the Makoran coast, further away from Iran's center (compared to Jask). 2) Because of its closeness to the Pakistani border, Chabahar is vulnerable to security concerns. The building of a city in the center of Makoran's seashore, roughly 450 kilometers from Pakistan's border, increases security for road traffic and tourists. A minimum distance of 200 kilometers from the Pakistan-Afghanistan border is maintained along the whole length of the Jask-Mashhad motorway. 3) Chabahar will be sufficiently developed as a result of the building of massive development projects such as Shahid Beheshti Port and several petrochemical and fishery projects, and there is no reason to be concerned about the growth of Chabahar. 4) Since the Chabahar-Mashhad-Sarkhs railway line, currently under construction, will be sufficiently successful in reviving the neighborhood around Chabahar, other cities should also be considered for the freeway opportunity, which is the ideal situation in terms of land development. Moreover, connecting this freeway to Chabahar and Bandar Abbas (parallel to the Makoran coast) is a possibility.



Figure 5- The main cities along the Makoran coast



## 6. The population surrounding the freeway and its connectivity to the corridors

Figure 6 depicts the schematic position of the Jask-Mashhad freeway as well as the population of its adjacent provinces and countries. This freeway serves around 20 million Iranians and approximately 280 million people from eastern surrounding countries (a total of 300 million people), with the number expected to increase over time. The annual traffic potential of this freeway can reach 15-20 million passengers and tourists, as well as 15-25 million vehicles (cars, trailers, oil tankers, and trucks) per year, trying to connect the landlocked northern countries with neighboring countries such as Iran, the Indian subcontinent, and East Asia ( momtaznews, n.d.).



Figure 6- The population of provinces and surrounding countries, as well as the schematic position of the Jask-Mashhad freeway and its connectivity to major corridors that run through Iran.



## **7. Environmental challenges**

Undoubtedly, the construction of any freeway affects the ecosystem and environment and can change the distribution of wildlife and vegetation in the region. In order to reduce the negative environmental effects of the highway, it is very important to understand the environmental burdens produced in different stages of road development: construction, maintenance, traffic and end of life. The use of roads by cargo and passenger vehicles causes the emission of greenhouse gases (GHG) (Newman et al., 2012). The contribution of the exploitation stage is almost half of the total stages in the emission of greenhouse gases. In this regard, various environmental plans have been proposed to reduce greenhouse gas, some of which are based on the use of environmentally friendly items in the construction of asphalt, biodiesel fuel substitution, planting trees, and changing road and street lighting from high-energy mercury-based lamps to energy-efficient lights will reduce carbon emissions into the atmosphere (Newman et al., 2012; Wang, Harvey, & Kendall, 2014). In a case study conducted in Western Australia that reduced energy use and greenhouse gas emissions as a result of street lighting while maintaining road safety along major roads in the Perth metropolitan area from 2008 to 2011. It involved turning off selected street lights, "browning" between intersections along selected sections of major roads between 1am and 5am. The trial found that over three years, reducing street lighting resulted in AUD\$560,000 in electricity cost savings and an estimated 8,500 tonnes reduction in carbon emissions, with no significant crash risk (Newman et al., 2012).

In addition, emission reduction technologies such as the use of recycled materials and recycling techniques, reduction of mixing temperature and equipment energy substitution are commonly used to reduce greenhouse gas emissions from material production and construction stages. The use of emerging technologies such as carbon capture and storage, carbon sinks, and the use of hydrogen, solar, and photovoltaics in the road sector may have the potential to reduce emissions and should be further considered in future studies (Liu et al., 2022).



Road materials and road furniture can also be a source of pollution. Environmental effects and the amount of pollutants created depend on the type of materials involved. In addition, the type, condition and wear resistance of the surface layer, the impact of water and traffic and a range of other factors are all influential. Bitumens used in asphalt pavements today are designed to be environmentally friendly. Waste management is very important during the construction, operation and maintenance of roads. Some researchers have studied the ways in which different solid waste materials can be used in the road construction industry. Sufficient practical use of these materials will lead to a significant improvement in the recycling rate of these urban and industrial solid wastes. This reduces waste and preserves natural aggregates from draining and reduces construction and maintenance costs (Bamigboye et al., 2021).

#### **8. The capability of the Shanghai Cooperation Organization and the benefit of the freeway**

Shanghai Cooperation Organization because of the inclusion of two permanent members of the Security Council (China and Russia) as well as four nuclear-armed nations (China, Russia, India, and Pakistan) in this regional organization, as well as the presence of more than 40% of the world's population within the geographic area covered by its member nations. Also, the Shanghai Organization has obvious significance around the globe due to its member countries receiving more than 25% of global GDP (Wikipedia, Shanghai Cooperation Organization, n.d. ; Irna, (2017 June 5). Being a member of this regional organization will strengthen Iran's position as a great power in West Asia and a great energy power in the region ( Irna, 2022 September 14). Iran serves as a natural connection between the civilizations of the Arab, Afghan, Turkish, Pakistani, Armenian, and Turkmen peoples. In addition to providing a channel for the transfer of freight, a secure, quick, and affordable road connection may also link Shanghai member nations with other nations and countries for tourism tours ( momtaznews, n.d.). Iran has the most advanced railway and road system in the area when compared to numerous Shanghai Cooperation Organization member countries. The Jask-Mashhad freeway can provide a

direct relationship between the countries of this region and the surrounding countries of Iran because a look at the map of the member countries indicates that the majority of them are placed in the northeast of Iran, and their entry point into Iran is from that region. As a result, their entry through the Jask-Mashhad freeway and subsequent link to the freeway network of Iran can help to maintain the status of Iran as a regional transit center for commodities and visitors (Matalabi Karbkandi & Zare Zardini, 1400). Every year, Shanghai member countries send more than 400 million visitors to other countries; for example, one out of every ten foreign tourists on the globe is Chinese. If Iran absorbs a tiny portion of the member countries' tourism potential via proper roads and trains, the Iranian economy will be revolutionized in general, particularly in the eastern provinces of Iran, which would profit the most given their proximity to the Shanghai member countries.

#### **9. The cost and duration of the 1200 km of freeway construction**

The current cost of freeway building is 40–60 billion tomans per kilometer, depending on the kind of land and natural impediments along the route. A budget of 48-72 thousand tomans, or 2.25–1.5 billion dollars, is required for the 1,200-kilometer Jask-Mashhad freeway ( Khabaronline, 2021, October 30). On the other hand, the country is believed to have an annual capacity to create 1000 kilometers of freeway ( Khabaronline, 2019 November 1). If only 20% of the current capacity of the country is utilized for the Jask-Mashhad motorway, 200 kilometers will be developed per year. As a result, the full freeway may be built in 6 years, and with probable funding delays, 8 years can be contemplated. As a result, the annual budget required ranges between \$200 and 280 million dollars. Given the significance of this initiative for the Shanghai Cooperation Organization member countries, countries such as China, India, and Russia may contribute to its funding ( Irna, 2022 September 14).

#### **10. Development of new towns and villages along the freeway**

According to Figure 6, the provinces around this road have a population of around 20 million people, but the cities and villages close to this freeway



have a population of fewer than 2 million people because most of the eastern areas of the country are unoccupied and abandoned. The ability of this route to deliver sophisticated interstate and logistics services throughout the main corridors connected to it would result in the establishment of several logistics cities along it. Using the ability of visitors passing through the route to visit local tourist attractions in these communities would also aid in economic and population regeneration in these areas. It is expected that every 100 kilometers of this freeway, a city with a population of fewer than 150 thousand people will be formed, and every 30 kilometers, a village with a population of 5,000 people will be formed, increasing the population of 2 million people around this freeway to at least 4 million people.

Water supplies for this population can be obtained from local sources as well as from projects bringing water from the Gulf of Oman to Iran's central plateau. This rise in infrastructure and population in the eastern half of the country will eventually lead to better land usage and more optimum and equitable use of the country's land area, which will provide significant economic, security, and political advantages.

## **Conclusion**

This article demonstrated that the country of Iran does not have suitable land use in the present conditions by evaluating the population distribution situation in the east of the country in contrast to the entire country, and a large portion of Iran's area is not used optimally. Furthermore, the country's freeway distribution map reveals that all freeways in Iran are developed in the western and northern halves of the country, with no intercity freeway in the east. This freeway, with an approximate length of 1200 kilometers, a budget of roughly \$2 billion, and a construction time of 8 years, has the potential to revitalize the whole eastern half of the country. This freeway links the landlocked northern countries with neighboring Iran, the Indian subcontinent, and East Asia, and it is very important for Shanghai Cooperation Organization member countries. It can accommodate 15-20 million people and visitors every year, as well as 15-25 million vehicles

(cars, trailers, oil tankers, and trucks). Over 2 million people already reside along the motorway path, and if the freeway is completed, this number would increase to more than 4 million. Furthermore, in a 25-year perspective, this freeway will play a major role in the north-south corridor, rehabilitation of ports on the edge of the Oman Sea, implementation of sea-oriented development, and enhancement of land development (until 2045).

## References

- Al-Safi, B. (2013). Sea-oriented development: an overview of the world's marine sectors: Asrar Danesh
- Bamigboye, G. O., Bassey, D. E., Olukanni, D. O., Ngene, B. U., Adegoke, D., Odetoan, A. O., Nworgu, A. T. (2021). Waste materials in highway applications: An overview on generation and utilization implications on sustainability. *Journal of Cleaner Production*, 283, 124581.
- Barati, A., Ahmadi, S. A., & Zarei, B. (1400). Explanation of the defense-security difficulties of the Makoran coast's growth of the maritime axis on a regional and worldwide scale from the perspective of political geography. *Scientific Quarterly of Defense Strategy*, 19.
- Dehghan Morteza, M. (2019). Maritime Strategy and Sea-Oriented Development. *Behhang Quarterly*, 26.
- Wikipedia, Shanghai Cooperation Organization, <https://fa.wikipedia.org/wiki/>
- Hosseini Erani, A., & Qazi Andror, M. (2019). Assessment of the Supreme Leader's measures on the significance of the sea, the need for a presence in the open seas, and sea-oriented development. Paper presented at the first national conference on the development of Makoran coasts and maritime authority of the Islamic Republic of Iran.
- The country's road management center, <https://141.ir/>.
- Wikipedia, Tourism, <https://en.wikipedia.org/wiki/Tourism>.
- Karnaval, Route from Mashhad to Bandar Jask, <https://www.karnaval.ir/route/mashhad-to-jask>.





- School Book: Iran's 10th-grade geography book, (1400-1401), Ministry of Education.
- Liu, N., Wang, Y., Bai, Q., Liu, Y., Wang, P. S., Xue, S., Li, Q. (2022). Road life-cycle carbon dioxide emissions and emission reduction technologies: A review. *Journal of Traffic and Transportation Engineering (English Edition)*.
- The Islamic Council Research Center, Deputy for Infrastructure Studies, Transportation Department, (1400), Maritime-oriented growth and marine economy, an unavoidable requirement in realizing the country's dynamic and resilient economy , report number: 25017808.
- Matalabi Karbkandi, M. A., & Zare Zardini, A. (1400). Strategies for the development of the maritime-oriented economy in the direction of achieving the goals of the resistance economy. *Defense Economy Quarterly*, 6.
- Melabi Karbkandi, M. A., & Kefili, V. (2019). Suitable methods for developing marine transport in Iran. *Defense Economics Quarterly*, 159-178.
- Iran's 10th-grade geography book, (March 2019), Ministry of Education; National Land use planning Document, High Council of Land use planning.
- Newman, P., Hargroves, K. C., Desha, C., Whistler, L., Farr, A., Wilson, K., Surawski, L. (2012). Reducing the environmental impact of road construction.
- Qolipour Moghadam, F., Ismaili, R., & Pikani, M. H. (1401). Strategic components affecting the socio-cultural sustainability of the sea-oriented development of Makoran coasts. *Marine Science Education Research Quarterly*, Volume 9.
- momtaznews, Average traffic on the country's roads,  
<https://www.momtaznews.com/Average>

- Wang, T., Harvey, J., & Kendall, A. (2014). Reducing greenhouse gas emissions through strategic management of highway pavement roughness. *Environmental Research Letters*, 9(3), 034007.
- Elighasht, (2019), The global income of tourism exceeded 56 trillion dollars, <https://www.elighasht.com/Blog/news/>.
- Irna, (2017 June 5), China: We support Iran's membership in Shanghai, <https://www.irna.ir/news/82554701>.
- Irna, (2022), Iran and the Shanghai Cooperation Organization; Complementary capacities, mutual benefits, <https://www.irna.ir/news/84885435>.
- Irna, (2022), Iran and the Shanghai Cooperation Organization have enormous and complementary capacities, <https://www.irna.ir/news/84886566>.
- Khabaronline, (2019), How much does it cost to build each freeway kilometer?, <https://www.khabaronline.ir/news/1316341>.
- Khabaronline, (2021), How much does it cost to build each freeway kilometer?, <https://www.khabaronline.ir/news/1571472>.
- Zaki, Y., Ahmadi, S. A., Abbasi Shoazi, M. J., & Adibnia, Z. (2020). Identifying and Analyzing the Spatial Pattern of Foreign Immigrant Settlement in the Rural and Urban Environment of Iran. *Journal of Rural Research*, 10(4), 728-739.
- Zare, E. (2011). Human Prosperity Development Through Sea-Oriented Improvement. *Bandar and Darya Monthly*(36).