Developing Country Studies
ISSN 2224-607X (Paper) ISSN 2225-0565 (Online)
Vol.8, No.3, 2018

Tianjin Port-Hinterland Connectivity to Mongolia: Challenges and Strategies

Khaliun Nasanjargal* Pascal Kany Prud'ome Gamassa Yan Chen
Transportation and Management College, Dalian Maritime University, No. 1 Linghai Road, Dalian 116026, China

Abstract
Tianjin port is located in the north part of China making it the closest port to Mongolia, which is a landlocked country that belongs to its hinterland. The rapid economic progress of Mongolia during the recent years has lead the country to open up to some new major partners such as South Korea, Germany and the United States of America. It has also lead to a higher demand of its population for South Korean, European and American goods that are of good quality though considered expensive. This demand has caused a container congestion problem at Tianjin port and Zamyn-Üüd dry port hence creating difficulties in importing goods to and exporting goods from Mongolia via Tianjin port. Consequently, this article uses a qualitative methodology to analyse and discuss the challenges of Tianjin port-hinterland connectivity to Mongolia. Some of the main challenges discussed below include the constant increase of the import tariffs at Tianjin port and Zamyn-Üüd dry port, the small number of trains and wagons connecting Tianjin port to Zamyn-Üüd dry port, the presence of many middle companies and the lack of good communication between Tianjin port and the Mongolian custom officers present at Zamyn-Üüd dry port. Moreover, some specific strategies are suggested and discussed on how they are capable of tackling the numerous challenges. These strategies will be essential to Tianjin port authorities in order to improve the efficiency of Tianjin port-hinterland connectivity to Mongolia and to Mongolian officials as well. This will enable them to develop better structures and infrastructure hence making it easier for Mongolian customers to import and export their goods.
Keywords: import, export, hinterland, Zamyn-Üüd dry port, Tianjin port

1. Introduction

Since the beginning of this new century, Chinese ports main objective is to become and remain among the busiest ports in the world. Some Chinese ports have a very large hinterland, that contains other foreign countries. This applies to Tianjin port which is one of the biggest ports in China based on cargo throughput. It is the principal access to the sea of Mongolia considering it as a very good market. Tianjin port aims to remain the main port used by Mongolian customers. For this, there is a higher competition not only with the Russian ports, but also with other Chinese ports such as Dalian port and Qingdao port that are also located in the north part of China. China is considered to have the highest number of the busiest ports in the world and this can be explained by the fact that China encourages severe competition among its own ports. Nowadays, more and more Mongolian customers are starting to pay more attention to the connectivity problem between their country and the surrounding ports. The quality of hinterland connections is the second most important criterion for competitiveness of a port after the cost factor (Raimonds Aronietis, Paresa Markianidou, Hilde Meersman, Tom Pauwels, Marc Pirenne, Eddy Van de Voorde, Thierry Vanelslander, Ann Verhetsel, 2010). However, recently due to the increase of the gross domestic product (GDP) of Mongolia, Mongolians have started to give more priority to the quality of the services than to the price of the services offered by ports, including hinterland connections. Gateway seaports and the multimodal corridors connecting them to widely dispersed hinterlands are of crucial importance to international trade and the world economy (Dr. Fedele Iannone, 2013). To keep maintaining its current Mongolian customers and increasing its customers' number from Mongolia, Tianjin port has to make sure that Mongolian customers remain satisfied with the different services it proposes inside and outside the port. Landlocked economies are primarily affected not only by a high cost of freight services, but also by the high degree of unpredictability in transportation time (Jean-François Arvis, Gael Raballand, Jean-François Marteau, 2010). Hence the analysis on Tianjin port-hinterland connectivity to Mongolia is of great interest, as suggestions will be provided on how to solve the different challenges that are present in this particular case. Though each country has different realities, some suggestions might be also used by some other ports in the world, that are connected to landlocked countries. For this research, a qualitative methodology is applied, where different interviews were done with representatives of Mongolian tax authority, representatives of the Zamyn-Üüd dry port, some regular Mongolian customers of Tianjin port, some officials of Ulaanbaatar Railway Company (UBTZ) and Cosco Shipping, that both link Tianjin port to Mongolia by railway and some representatives of Tianjin port Authorities. The data used in this article were collected from the interviews, the National Bureau of Statistics of China and the official website of the Logistics Development Co., Ltd. The main objective of this article is to deeply analyse the challenges that are currently existing in the Tianjin port-hinterland connectivity to Mongolia and suggest some strategies, if implemented, will help to deal with the

analysed challenges.

2. Literature Review

It is very essential to have a good connectivity between a landlocked country and a port. The development of better hinterland connections in many cases has become as important as the port facilities themselves to secure additional traffic (Jean-Paul Rodrigue, Theo Notteboom, 2006). Nowadays, topics related to the connectivity of Mongolia to Chinese and Russian ports capture the attention of many researchers and logistics experts. This is because Mongolia is trying its best to diversify its partners so that it can become an emerging country in the coming years while China considers Mongolia as a major part of its "One Belt One Road" strategy agenda. Most of the researchers who have written articles on similar topics, have either been focusing only on Tianjin port or on Zamyn-Üüd dry port. This article is the first to analyse the different challenges present in the Tianjin port-hinterland connectivity to Mongolia, taking into account every institution and company present in this corridor in order to provide some suggestions. The Chinese and the Mongolian parts of the hinterland connectivity are both taken into consideration, as the goods are transported into the two countries. This gives a concrete analysis of what happens when goods are imported in Mongolia and exported from Mongolia through Tianjin port. Hilde Meersman, Tom Pauwels, Eddy Van de Voorde and Thierry Vanelslander (2008) discussed the relationship between port competition and hinterland connections. They concluded that ports must offer adequate capacity to maritime traffic, both in terms of goods-handling facilities and hinterland transport options. Taking China's ports-hinterland logistics system as an example, Wang Yang, Ma Xing-rui and Chen Yuan-zhi (2008) discussed in their paper, the harmonious operation of logistics finance management of supply chain which is composed of the functional entity activities such as transportation, warehousing, packaging, circulation and information transmission, as well as the goods movement of all sectors of the logistics process. They concluded that the port and the hinterland bear a relationship of facilitating and conditioning each other, namely the change of turnover rate of financial element will coordinate the development of ports-hinterland. Jian-she Li and Xiao-li Miao (2010) in their article, did not only take Tianjin port logistics as an example to demonstrate how to select a proper development mode of port logistics for coastal cities but also applied the analytical hierarchy process to the selection of the development mode of port logistics of Tianjin. According to them, if Tianjin selects a proper development mode of port logistics industry, Tianjin will become a modern logistics center, and the port and city competition ability will be promoted completely. Fan Feng, Yusong Pang and Gabriel Lodewijks (2014) described in their paper, the development of an agent-based information integrated platform for hinterland waterway barge transport planning. They believe that in the near future, barge transport has potential to become the primary mode for the containers to transport from port terminal to hinterland, especially for the countries with extensive national and international waterway network such as the Netherlands and Belgium.

On the other hand, Andrew Egba Ubogu (2011) in his article evaluated the potentials of integrating rail-road system for port-hinterland freight in Nigeria. The collected data was analysed using frequency distribution, student's t-test, and Geometric Mean analysis. The findings of his paper revealed that integrating rail-road for hinterland bound goods would be timely and potentially save 44.2% and 93.7% freight costs on the western and eastern flank respectively from the seaports of Lagos and Port Harcourt. Loris Rak, Borna Debelić and Siniša Vilke (2016) in their paper developed possible models for organisation of the management of rail transport services within the port area in order to research governance mechanism and provide standards of quality of railway operations, which are in accordance with the existing legal framework and on best practice solutions. Rickard Bergqvist and Johan Woxenius (2009) analysed the phenomenon of hinterland transport by rail and the remarkable journey that has taken place during the last ten years in Europe, especially in Scandinavia. In their article, they concluded that rail shuttle services and dry ports will clearly play an important future role in ensuring a competitive and sustainable logistics system assuming that it is able to grow and develop according to market demand. T. Kadono, T. Yamaka, R. Shibasaki and K. Amma (2004) in their paper analysed the hinterland transportation of international maritime container cargos in Japan, especially focused on transportation by rail, from the following viewpoints; I) the present situation of transportation service, II) the feature on commodities, import/export countries, volume of transportation lots, prices of cargos, and transportation distance, and III) the effectiveness of modal shift from road transportation to railways, from the viewpoints of the emission of carbon dioxide. Their findings revealed that in the hinterland transportation of international container cargos, the modal share of railway and water transportation is very small compared with tracks or trailers. Feng Sun, Xuefeng Wang, Lin Jin and Yeru Shi (2017) in their paper, proposed a TOPSIS decision model based on entropy weight, helping to effectively select the optimal multimodal transport plan from Ningbo-Zhoushan sea port to southwest areas. They concluded that the best transport plan of 20 feet container from Ningbo-Zhoushan to Chengdu and Guiyang is the direct railway transport while the best transport plan of 20 feet container from Ningbo-Zhoushan to Kunming is the goods transported by rail from Ningbo-Zhoushan to Chongqing and then road from Chongqing to Kunming. Antun Stipetić, Željko Bagić and Martin Starčević (2006) in their paper studied the possibilities of improving the transport of goods from the Port of Ploče by rail and the

influence of this type of carriage on the development of the port. They concluded that the importance of railways as the main generator in the exchange of goods is enormous.

3. Analysis of Tianjin Port Hinterland

Tianjin port which is in Tianjin city is located close to Bohai Bay. It was built during the Han Empire but was officially reopened to transport goods to and from other foreign countries in 1952. Since then, it became a major port in China. Within China, Tianjin Port serves a hinterland area of about 4.5 million square kilometres. It represents 47% of China's total area. Indeed, it covers Beijing and Tianjin, which are two municipalities, Hebei, Shaanxi, Shanxi, Gansu, Qinghai, Xinjiang, Tibet and Ningxia provinces, and some regions of Henan Province. Mongolia is a country which is also included in the hinterland of Tianjin port. In fact, Mongolia and China are neighbouring countries though Mongolia is a landlocked country. Mongolia has many mineral resources such as copper, coal, gold, etc. Its economy is mainly dependent on these minerals. These resources are in general exported through Tianjin port. Thus, Tianjin port has a very large hinterland with a total population of about 346.52 million people. Apart from mineral resources, Tianjin port also exports other kinds of goods. The fact is Chinese cities and provinces that belong to the Tianjin port hinterland do have mainly automobile factories, iron and steel plants etc. Tianjin port is the largest port in the north east part of China and is considered as an economic lung because of the high revenue it generates every year. It is connected to 27 dry ports, within its hinterland and roads and railways are the two main transportation modes available to import or export goods through Tianjin port. From the below Figure 1, it can be seen that starting from 2000 up to 2016, the Tianjin port container throughput has been constantly increasing. The data were collected from the National Bureau of Statistics of China.

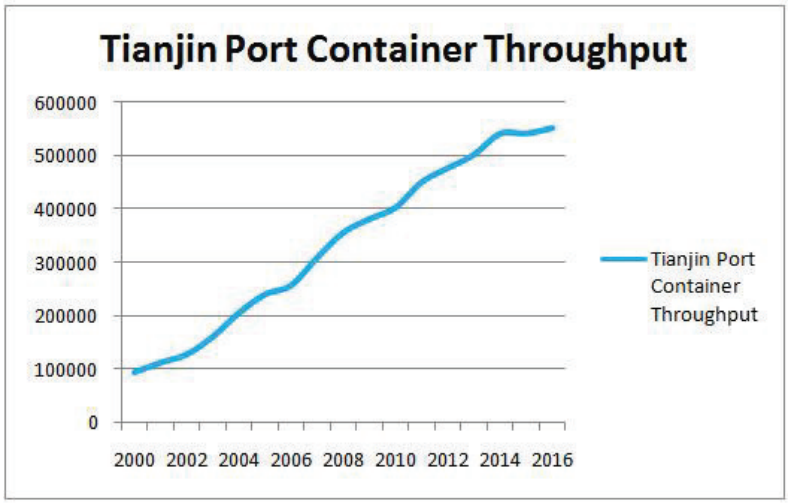

Figure 1. Tianjin Port Container Throughput, annual 2000-2016
Measure: TEU (Twenty-foot Equivalent Unit)

Only 30% of the goods that transit through Tianjin port have Tianjin City as their final destination. Its activities greatly depend on Mongolia, provinces and other cities of China. And Tianjin port also benefits from a strategic position in the implementation of the china “One Belt One Road” strategy. Having been implemented in 2013, the Chinese “One Belt One Road” strategy follows the Chinese “Go out” strategy that was implemented in the beginning of this Century (Pascal Kany Prud’ome Gamassa, Yan Chen, 2017). Goods that arrive at Tianjin port are transported to Russia through Mongolia. Hence, it plays an important role in the China-Mongolia-Russia economic corridor.

4. Challenges of Tianjin Port-Hinterland Connectivity to Mongolia

The challenges present in the connectivity between Tianjin port and Mongolia can be sub-divided into three parts: Tianjin port challenges, Tianjin port-Mongolia transportation challenges and Zamyn-Üüd dry port challenges. The Tianjin port challenges consists of the challenges that are present in every process related to the arrival and departure of the containers at Tianjin port in China. Tianjin port has a draft capacity problem so it can not receive very big ships. There is a container congestion problem which has not yet been solved efficiently. Hence, Mongolian customers’ containers spend many days at Tianjin port. Tianjin port has its own logistic company called Tianjin Port Logistics Development Co.Ltd. that can transport the containers that arrive at Tianjin port to the port’s hinterland. Hence, the authorities of the port are not so satisfied with the choice of Mongolian customers in terms of who transports their goods. This is because they usually choose other small Chinese logistic companies using trucks to transport their goods from Tianjin port to Zamyn-Üüd in Mongolia. These small logistic companies are the competitors to the Tianjin port’s logistic company. Tianjin port has a logistic

problem within its logistics centres chain. This is due to the lack of good communication between its different centres which currently do not use a good sharing information system. This lack of information leads to poor communication among various departments of Tianjin port. Tianjin port does also have human resources problem. Some of its employees are not well conversant with some of the maritime field knowledge. Thus, contributing to the decrease in quality of the service. There is a lot effort that needs to be put in place in order to increase the quality of the services for the Mongolian market. Nowadays, ports need advanced technology system to be managed efficiently, but Tianjin port has a great lack of employees who are highly talented in technology. Tianjin port does not really exchange information with the Mongolia Customs officers at Zamyn-Üüd dry port. Of recently, there has not been really any new innovation in the services that the port proposes to its Mongolian customers. Nothing new, still the same old kinds of services are proposed. The import tariffs at Tianjin port are high.

Tianjin port-Mongolia transportation challenges, consists of the main challenges present in every transportation method that is used by a person to transport his goods from Tianjin port to Mongolia or from Mongolia to Tianjin port. It is well known that Mongolia is connected to Tianjin port by railway and road. Hence in this particular case, we may differentiate these transportation means by the railway mode and the road mode. In what concerns the railway mode, as shown in the Figure 2 below, there is a railway that exists between China and Russia and that passes through Mongolia. The data were collected from the Ministry of Foreign Affairs of Mongolia.

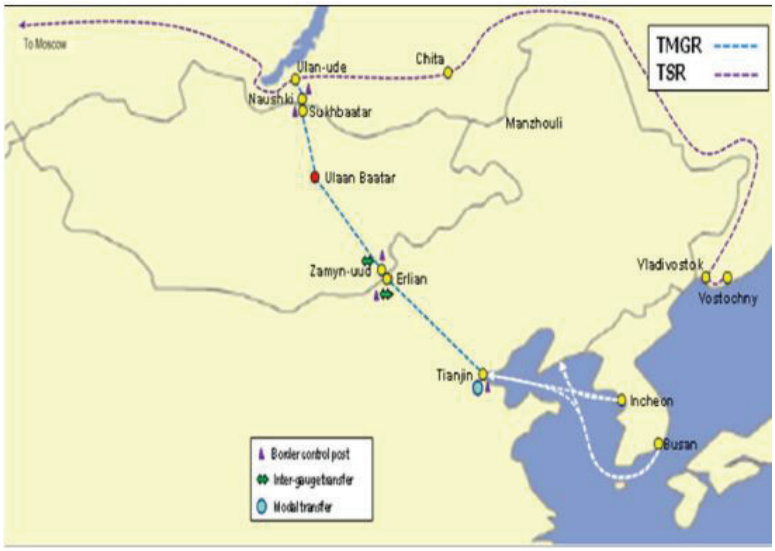

Figure 2. Railway from Tianjin to Mongolia

The total distance from Tianjin port in China to Zamyn-Üüd city in Mongolia is 1004 km. Containers that arrive at Tianjin port are mostly transported to Mongolia by railway. The Containers after arriving in Tianjin port, are put into wagons of trains and then transported to Erlian (Erenhot), a city located at the border between China and Mongolia, on the Chinese side and then to Zamyn-Üüd. Unfortunately, the trains do not leave Tianjin port to Zamyn-Üüd city every day because of the few number of trains available. This implies that, though almost every day new containers which have Mongolia as their final destination, arrive at Tianjin port by means of a boat, most of them can not be transported to Zamyn-Üüd city on the same day. The trains that leave from Tianjin port to Zamyn-Üüd city, also have another problem that is they only have few wagons available to transport containers. These trains mainly belong to the Ulaanbaatar Railway Company (UBTZ) which is a joint venture company that belongs to Russia and Mongolia, and to Cosco Shipping which is a Chinese company of transportation. The Mongolian railway gauge is 1,520 mm while the Chinese gauge is 1,435 mm (B. Otgonsuren, 2015). Thus, if a train that is coming from Tianjin port arrives at the border of Mongolia and China, before entering Zamyn-Üüd city, its gauge must be changed. It takes 4 to 6 hours to change the gauge. This is because Mongolian railways were built by Russians, hence Russia and Mongolia have a similar railway gauge. In what concerns the road mode, trucks coming from Tianjin port need about 3 days to arrive in Zamyn-Üüd. Despite the fact that Mongolians can enter China without the need of a visa for a period of 30 days each time, Mongolian trucks are not allowed to enter China in order to go to Tianjin port and collect Mongolian goods during the transportation. The monopoly is given to Chinese trucks which have to be rented by Mongolian customers at a high cost yet this is a disadvantage to Mongolian customers. These customers usually pay about $3000 for the transportation of a 20 feet container from Tianjin port to Zamyn-Üüd. The Chinese trucks belong to Chinese middle logistics companies that act as agents.

The Zamyn-Üüd dry port challenges, consists of the main challenges present in every process related to the

arrival and departure of the containers at Zamyn-Üüd dry port in Mongolia. The current dry port present in Zamyn-Üüd can not support the high demand of foreign goods. It is really inefficient. The customs fees at Zamyn-Üüd dry port are so high that sometimes, Mongolian customers fail to withdraw their goods on time. This is brought as a result that Mongolian customers have not got enough money to pay for the different fees. Indeed, the long delay of the treatment of their import documentation considerably increases the demurrage fees. There are so many documents that are asked at Zamyn-Üüd dry port to import or export goods. So many taxes are sometimes also created by the officers working there, in order to make the Mongolian customers spend more money than they normally planned to spend. When importing or exporting goods, Mongolian customers usually use the services of Mongolian logistics companies to transport their goods from Zamyn-Üüd dry port to their city of origin or vice versa. The service fees of these companies have been also constantly increasing.

5. Suggested Strategies

Mongolia is an under developed country, economically wise and the challenges mentioned above will definitely not help the Mongolians to come out of their current economic situation. Hence, based on the above findings, that were collected through a research field, some strategies that will take into consideration every step of the process of import/export of goods in Mongolia through Tianjin port, can be found below.

5.1 Improve the services quality at Zamyn-Üüd dry port

To help the Zamyn-Üüd dry port improve its quality of services, it is firstly important that the authorities of the port acquire new equipment. This implies that it will require money, but the money can be borrowed from China or Russia, whose goods are also transiting through this dry port. They will surely be cooperative. With the high revenue that the dry port will generate by using new equipment, the debt will be easily paid off. Secondly, every year, employees of the dry port should take part in a short training that will consist of learning new techniques on managing the dry port. Since Mongolia and China are neighbours and have a friendly relationship, each year a group of employees of the Zamyn-Üüd dry port can go to China in order to be trained at a Chinese dry port for a short period of time. Language will not be a problem as more and more Mongolians can speak Chinese. Thirdly, more experts should be invited to come and work with the authorities of the dry port, in order to share their knowledge with the employees of the dry port. Fourthly, the dry port should employ more skilled people, people who have been to University and have an education background related to international trade, logistics, transportation etc. Fifthly, private participation in the management of the dry port should be encouraged by the dry port authorities.

5.2 Introduce a new credit payment method at Zamyn-Üüd dry port

The credit payment system is already well developed in Mongolia, but still inexistent at the Zamyn-Üüd dry port. Knowing that Mongolia is an under developed country and importing-exporting fees are high, a new credit payment method can be created in two forms. The first form consists of allowing Mongolian banks to pay for the customs clearance or other dry ports related fees, on the behalf of a customer. Thus, as the dry port customer is also a customer of a Mongolian bank, he will later pay back his credit to the bank on a monthly basis. The second form consists of allowing the imported or exported goods to be released on credit. Indeed, Zamyn-Üüd dry port officials can request a letter of guarantee issued by a Mongolian bank for the payment of the different fees. Through this form, payments can be made by the customer later as they will be guaranteed by a local bank. The implementation of this new method will be easy and it will greatly help the Mongolian customers to import or export their goods. The two proposed forms of this method can be applied at the same time. It is also possible to apply only one of the two forms.

5.3 Improve the services of the Tianjin port logistic company

Generally, Tianjin port should reduce the price of the services offered by its own logistic company that carry goods to its hinterland and to Mongolia in particular. This is done in order to attract more Mongolian customers and conquer the market of the other logistic companies. Tianjin Port Logistics Development Co. Ltd. should translate the content of its current website in Mongolian language so that Mongolian customers can know more about the services it offers. Advertisement of the company should be made on Mongolian media. A branch of this company should be also opened in Zamyn-Üüd. This will help the Mongolian customers to avoid using small Chinese logistics companies.

5.4 Increase the number of trains operating in the Tianjin port- Zamyn-Üüd corridor

Authorities of the Ulaanbaatar Railway Company (UBTZ) should buy new trains and wagons so that more trains can operate in the Tianjin port-Zamyn-Üüd corridor every day. These trains should also have a great number of wagons in order to be able to carry many containers.

5.5 Improve the railway in Zamyn-Üüd

In order to avoid wasting time when crossing the border from China to Mongolia, the railway in Zamyn-Üüd can be improved to a better one so that it has the same gauge size as the Chinese railway. This project can be financed by China, as it will be for the promotion of its "One Belt One Road" strategy initiative. This will help to save time hence leading to the improvement of the efficiency level of the transportation of goods between both countries.

5.6 Create a platform of exchange of information

Tianjin port should improve its current information sharing system to a system that can display: date and time of arrival of the goods, their origin, destination country and city, the names of the sender and the recipient of the goods, the name of the logistic company in charge of collecting the goods, the kind of goods, the number of goods, etc. Through the platform of exchange of information that can be created, Tianjin port can therefore share the above mentioned information with the Mongolia Customs office present in Zamyn-Üüd. Zamyn-Üüd dry port should also open a website so that its Mongolian customers can check the status of their goods.

5.7 Develop logistics centres in each main Mongolian city

Mongolia should build many logistics centres to decongest the Zamyn-Üüd dry port. Since Mongolia is a big country which has enough available land to build these centres. As illustrated in the below Figure 3, the logistics centres can help in what concerns the freight transportation, the handling and storage of the containers. They can be built in Ulaanbaatar, which is the capital city of Mongolia, Erdenet, Darkhan, Sukhbaatar, etc.

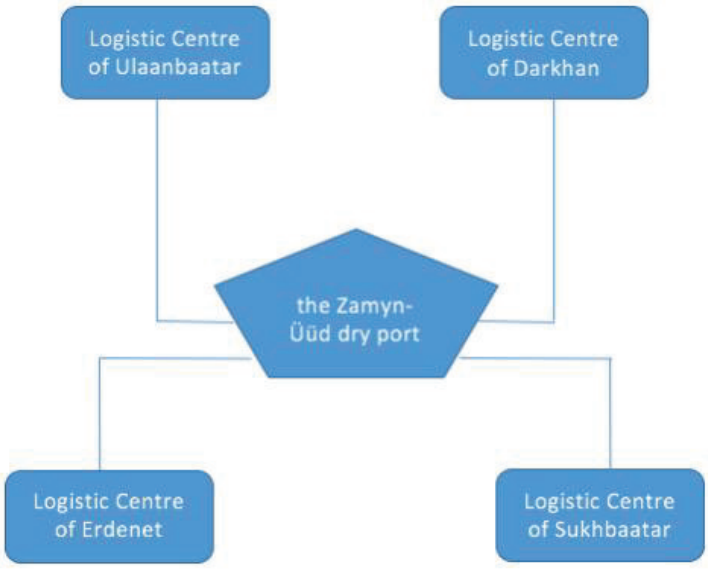

Figure 3. Suggested Zamyn-Üüd dry port logistic network

Through these logistics centres, Mongolian customers can bring their goods to a logistic centre and prepare all the formalities to export their goods. The logistic centre will be in charge of transporting their goods to Zamyn-Üüd dry port and exporting them via the Tianjin port. Customers can also go and pick up their imported goods in the logistic centre. By doing this, Mongolian customers coming from different cities will not necessary need to travel to Zamyn-Üüd to export and import their goods. They will not need to use a private Mongolian logistic company to transport their goods from their city of origin to Zamyn-Üüd and vice versa. These transportation fees can be earned by the Zamyn-Üüd dry port which will work with the logistics centres.

5.8 Reduce the port and customs fees

For goods that come from Mongolia or have Mongolia as their final destination, China and Mongolia can sign an agreement that allows those goods to pay a very low import or export fees at Tianjin port. In order to promote trade with other countries and maintain its economic growth, Mongolia really needs to reduce the import fees as it will help Mongolian customers to purchase foreign goods in Mongolia at a lower price. This will encourage people to buy more foreign goods, leading to the increase of the number of imported goods, thus if more goods are imported, the government can get a higher revenue through import fees. Reducing the export fees will also help goods made in Mongolia, to easily enter foreign markets, hence promoting the country.

5.9 Centralize the import and export process

At Zamyn-Üüd dry port, the import-export process should be centralized by implementing a single window system that will be adapted to the needs of Mongolians and the realities of Mongolia. This single window system can be in charge of handling all the documents and fees needed to export and import goods in Mongolia. This will reduce the fees to be paid by Mongolian customers, prevent bribery and also help the whole process to become more transparent and efficient.

5.10 Improve the services quality at Tianjin port

Tianjin port should deepen its draft so that it can welcome bigger ships. It should innovate and improve its services offered to Mongolian customers. It is important to constantly propose new services to customers in order to increase your market. The port should propose high salaries and very good working conditions to people who are talented in high technology. Security should be increased within the port and systems of the port should be more controlled.

6. Conclusion

This article is based on the Tianjin port-hinterland connectivity to Mongolia and noted that it is necessary to centralize the import and export process at Zamyn-Üüd dry port, to develop logistics centres in each main Mongolian city, to introduce a new credit payment method at Zamyn-Üüd dry port, to improve the services quality at Zamyn-Üüd dry port, to increase the number of trains operating in the Tianjin port- Zamyn-Üüd corridor, to improve the services quality at Tianjin port, to create a platform of exchange of information, to improve the services of the Tianjin port logistic company, to reduce the port and customs fees and to improve the railway in Zamyn-Üüd. As China wants to expand its "One Belt One Road" strategy and Mongolia wants to play a major role in this strategy, it is therefore necessary for both countries to make sure that the connectivity from Tianjin port to Mongolia, becomes more efficient than it is now. This will reinforce the cooperation between the two countries, help China to keep maintaining a position as the main partner of Mongolia, and hence bring in more revenue to both countries. To keep attracting current and more Mongolian customers, Tianjin port should improve its services and pay more attention to the services offered during its connectivity to Mongolia. If the above mentioned strategies are applied, they will lead to better results. A major insight in this article is to demonstrate how having a major port used by Mongolian customers, has created a lack of motivation in improving the services and structure at Tianjin port. Hopefully where there is a will there is surely a way. If the above recommendations are not taken into consideration, in the coming years, Tianjin port will definitely lose many Mongolian customers who will prefer to spend a little bit more money but receive a better service from another port in China or in Russia. This article can be used as a reference by all companies and institutions concerned by the Tianjin port-hinterland connectivity to Mongolia.

References

Raimonds Aronietis, Paresa Markianidou, Hilde Meersman, Tom Pauwels, Marc Pirenne, Eddy Van de Voorde, Thierry Vanelslander & Ann Verhetsel (2010), "Some effects of hinterland infrastructure pricing on port competitiveness: case of Antwerp", *12th WCTR*, Lisbon, 1-23.

Dr. Fedele Iannone (2013), "Dry ports and the extended gateway concept: port-hinterland container network design considerations and models under the shipper perspective", *Ssrn Electronic Journal*, 1-26.

Jean-François Arvis, Gael Raballand & Jean-François Marteau (2010), "The Cost of Being Landlocked: Logistics Costs and Supply Chain Reliability", *Social Science Electronic Publishing* 28(2), 1-81.

Jean-Paul Rodrigue, Theo Notteboom (2006), "Challenges in the Maritime-Land Interface: Port Hinterlands and Regionalization", 1-27.

Hilde Meersman, Tom Pauwels, Eddy Van de Voorde & Thierry Vanelslander (2008), "The relation between port competition and hinterland connections the case of the 'Iron Rhine' and the 'Betuweroute", *Conference proceedings of the International forum on Shipping*, 1-23.

Wang Yang, Ma Xing-rui & Chen Yuan-zhi (2008), "Study on the Harmonious Operation of Logistics Finance Management of Supply Chain in Ports-Hinterland Based on System Dynamics", *International Conference on Risk Management & Engineering Management, IEEE Computer Society*, 82-86.

Jian-she Li & Xiao-li Miao (2010), "Research on Mode Selection for Developing Port Logistics in China Based on Analytical Hierarchy Process -Taking Tianjin Port Logistics as an Example", *IEEE International Conference on Industrial Engineering & Engineering Management*, 1383-1387.

Fan Feng, Yusong Pang & Gabriel Lodewijks (2014), "An Intelligent Agent-based Information Integrated Platform for Hinterland Container Transport", *IEEE International Conference on Service Operations & Logistics*, 84-89.

Andrew Egba Ubogu (2011), "The potentials of rail-road integration for port-hinterland freight transport in Nigeria", *International Journal for Traffic & Transport Engineering* 1(2), 89-107.

Loris Rak, Borna Debelić & Siniša Vilke (2016), "Modelling the railway port infrastructure management system: a case study of the Port of Ploče", *Scientific Journal of Maritime Research*, 88-94.

Rickard Bergqvist & Johan Woxenius (2009), "The development of hinterland transport by rail- The story of Scandinavia and the port of Gothenburg", *Journal of Interdisciplinary Economics* 23(2), 1-11.

Kadono, T. Yamaka, R. Shibasaki & K. Amma (2004), "An Analysis on Multimodal Transportation of International Maritime Container Cargo in Japanese Hinterland", *Oceans* 4, 2270-2275.

Feng Sun, Xuefeng Wang, Lin Jin & Yeru Shi (2017), "Improvement of Rail-sea Multimodal Transport with Dry Port Construction: Case Study of Ningbo-Zhoushan Port", *Science Journal of Business and Management* 5(2), 78-87.

Antun Stipetić, Željko Bagić & Martin Starčević (2006), "Influence of railway on the development of the port of Ploče", *Promet-Traffic & Transportation* 18(6), 423-428.

The National Bureau of Statistics of China, (2018). [Online] Available: www.stats.gov.cn (2018)

Pascal Kany Prud'ome Gamassa & Yan Chen (2017), "The Impact of China One Belt One Road on Abidjan Port Development Based on Gravity Model", *International Journal of Trade, Economics and Finance* 8(3), 141-148.

The Tianjin Port Logistics Development Co., Ltd. [Online] Available: http://www.tjportl.com/ (2018)

Ministry of Foreign Affairs of Mongolia, (2017), Introduction on Dry ports in Mongolia. [Online] Available: www.mfa.gov.mn (2017)

B. Otgonsuren (2015), "Mongolia–China–Russia Economic Corridor Infrastructure Cooperation", *Erina report,* 3-6.