

DEKRA Experts

Supplement 1 to the book.

The New Silk Road

The BRI Project

1 - Preface

The information we used for writing the book “The New Silk Road, the BRI project” is collected till mid October 2018.

The information that we collected after that, could not be used as a result of the time necessary for correction, lay-out and printing.

You will understand that the flow of information with regard to this project did not stop, but only increased.

This is the reason why we decided to write this supplement, based on the information till end February 2019.

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## 2 - Introduction

As it turned out in the introduction of the book, Chiang Kai-shek was conquered in 1949 by Mao Zedong, who proclaimed the People's Republic of China that same year. Chiang Kai-shek and his followers were chased away from the mainland of China to the island Taiwan (the former Japanese colony Formosa, that originally was a part of China), where they proclaimed in 1949 the independent state Republic China (not to be confused with the People's Republic of China) also named Taiwan.

The total area of Taiwan is 35,980 km<sup>2</sup> and the number of citizens 23.5 million (2017). Only 17 states politically recognize Taiwan, the Netherlands don't.

After 40 years of reasonable rest the People's Republic of China and Taiwan are involved in a sharp verbal dispute.

The Dutch newspapers Volkskrant and AD published on 6 January 2019 the words that Xi Jinping used in his New Year's Eve speech: *"China must and will be united"*.

For this China considers the way that was used to bring Hong Kong and Macao under Chinese rules ("the one country, two systems principle").

The president of Taiwan, Tsai Ing-wen, does not believe that all rights of his population will stay guaranteed (comparable with Hong Kong) and prefers to keep the situation as it is now for 70 years already. No doubt that this problem will result in strong tensions in the East Chinese Sea.

In the introduction of our book we mentioned the five factors, that influence the period of transformation and turbulence of the present world. We will consider two of these factors further:

The present population of the world is (end 2017) 7.6 billion people, with a yearly increase of approx. 83 million.

The UN has published a forecast for 2050, based on three variations:

- average : 9.1 billion
- high : 10.6 billion
- low : 7.7 billion

The variations are depending on the birth rate and mortality rate.

Which scenario will be closest to the truth is difficult to answer as a result of the present and future ageing (mortality rate decreased) and the decreasing birth rate (also in the third world countries).

A little higher than the average scenario seems to be reasonable (Source: UN World population prospects – 2004 – revision 2017).

The UN also published a forecast for 2300:

- average : 9.0 billion
- high : 36.4 billion
- low : 2.3 billion

The low scenario is based on the idea that from the year 2125 the world population is decreasing very fast as a result of shortage of food, lower birth-rates, wars, etc.

Climate change is the second topic we want to consider further.

In his last book “Brief Answers to the big questions” (2018 – Space-time Publications Ltd.) Stephen Hawking, the famous British physicist (08.01.1942 – 14.03.2018) considered at length the climate change.

In case no fast and effective measures are taken climate change will, according to him, result in total destruction of all life at earth, within 1,000 years. This is caused by the melting of the two polar areas and the large quantity of carbon dioxide, that comes free from the ocean bottom, resulting in a climate comparable with Venus, with a temperature of 250 ° C.

It must be clear that based on this, the climate agreements will have to be executed, not only on the western hemisphere, but worldwide.

### General

For those who are interested in the life and thoughts of Xi Jinping and the consequences of this for China and for the rest of the world, we refer to the book of the young Dutch political scientist Ties Dams, published end 2018 by Prometheus Amsterdam, under the title: “The New Emperor (Xi Jinping the most powerful man in China)”.

Ties Dams is member of the National Dutch Thinking Tank and develops strategies for politicians and the government.

Finally we want to draw your attention to the book “The New Silk Roads”, published in 2018 by Bloomsbury Publishing in London, and written by professor in world history (Oxford) Peter Frankopan.

This book describes in a very good way the period 2015 – 2018 and Frankopan’s expectations for the future. This book is the sequel to his bestseller “The Silkroads” from 2015 (book of the year 2015) in which Frankopan describes the world history, based on the Silkroads. Both books are for sure worth reading. We want to end this introduction with the quote of Peter Frankopan (in his 2018 book):

*“In the past all roads led to Rome, these days they lead to Beijing”.*

## 3 - Developments in the Netherlands

### 3.1 Schiphol and Rotterdam

The economic department of ING Bank fears a decrease of airfreight and as a result of that for the position of Schiphol.

The volume of cargo from China and Hong Kong is 20 % of the total cargo volume at Schiphol (2017) and could seriously decrease by the competition of railways.

The advantage of transport by rail compared with transport by air are the lower cost and the reduction of carbon dioxide emission.

The ING Bank does not worry for the Port of Rotterdam, because by sea transport, cheaper products in large quantities are involved (for instance 10,000 containers by ship and 40 by train).

The Erasmus University in Rotterdam has issued a report “The Rotterdam-Effect-Impact of mainport Rotterdam on the Dutch economy”, which shows that the port of Rotterdam is contributing twice the amount of the GDP as calculated before. This is caused amongst others by activities in other parts of the Netherlands as a result of the presence of the port (a.o. industry and services). The transfer of containers increased in 2018 with 5.7 % to 14.5 % million TEU.

### 3.2 West Brabant, Limburg and Drenthe

The region West Brabant gets a more and more important role in logistic services. In and around Tilburg the number of distribution centres is growing (source AD 23.01.2019). The largest Dutch electronic group Mediamarkt, with approx. 50 shops and a web shop is building a distribution centre in Etten Leur. From there they will start delivering themselves at shops and clients of the web shop. Till the opening this is done by the approx. 200 suppliers of Mediamarkt, that provide all shops and clients.

The city of Tilburg as a logistic junction is already mentioned in our book. In the meantime it is turned out that also Venlo is playing an important role . On 12 November 2018 a contract was signed between Greenport Venlo and ProRail/Dura Vermeer, to construct a rail terminal where in 2020 containers can be loaded and discharged. More and more companies establish on the Greenport Venlo territory.

Also the port of Moerdijk is a vital link in container transport, just as the inland shipping terminals in Wanssum and Tiel.

The city of Coevorden in Drenthe, close to the Dutch-German border, starts a new railway service to various Chinese destinations under the name C2C (Coevorden to China). This was announced on 19-02-2019 by Railfreight. The rail terminal Coevorden wants, together with her German partner-city Bad Bentheim, to cover the north part of the Netherlands.

Unfortunately the large web shop “Alibaba” (and her daughter companies) did not chose for the Netherlands to establish her European distribution centre, but for the Belgian city Luik. For the Netherlands Maastricht and Weert were candidates, but Alibaba choose for Luik.

### 3.3 The lack of international consideration

There is an international platform, in which a.o. China, Poland, Russia, Germany, Mongolia, Belarus and Kazakhstan are member of, but there is no international platform, with regard to BRI, where The Netherlands are involved in. During the New Silkroad Congress 2018 in Tilburg, it appeared that the Dutch organisations, that are involved in container transport to and from China, are asking the Dutch government to facilitate such a platform, of which all countries that are involved, will be a member.

Problem is that the Dutch infrastructure is under control of a private company (ProRail) and not, as it is in the abovementioned countries, a state company. Germany has still one state company, but the German goverment auditor’s office is at this moment advising to follow the Dutch model, a separation of the railway network and the logistic activities (a.o. transport of cargo). It has to be proved in future whether this is wise or not.

### 3.4 The role of the Dutch government

In December 2018, during an EU meeting, the Dutch government stated, that it will invest 12 to 14 million Euro extra in railway infrastructure from 2019 till and including 2022, apart from the investments in ERTMS and other modifications. This extra investment is necessary to increase the max. length of trains from 650 to 740 metres on all railways in the Netherlands, comparable with Germany, to reach one international standard. On the so called “Betuweroute” from Rotterdam-Maasvlakte to Zevenaar 750 metres length is allowed, but on other routes not.

The Dutch cabinet is considering a new China strategy, according to various publications in November 2018. This strategy must secure the possible risks of take over of Dutch companies by China.

Eight ministers and the prime minister are involved in this.

## 4- The Maritime Silk routes

### 4.1 Ports

The port of Mombassa in Kenya is at risk of take over by Chinese entities because Kenya can not pay off the Chinese loans for the Mombassa – Nairobi railway. This is comparable with the 99 year lease construction for the port of Hambantota in Sri Lanka, by which Sri Lanka paid off a part of her debt to China in July 2017 (in this port the average loading/discharging is one ship per day).

In February 2019 the port of Piraeus signed a “Memorandum of Understanding” with the ports of Venice and Chioggia in Italy in order to create a stable mutual cooperation.

The ultimate goal is to intensify the transport flow between Asia and the Mediterranean Sea.

It is the question what the consequences for Rotterdam will be.

Also the country with the largest oil-reserves in the world and the largest poverty, has a comparable problem. Venezuela can not pay back the Chinese investments. Part of the Chinese population wants China to stop with various loans and start using the money for her own population.

COSCO Shipping Port has bought 60 % of Chancay Terminals in Peru, on 23 January 2019.

### 4.2 The Northern Icesea Route

After the successful experiment with the Venta Maersk, Maersk Shipping Lines has decided that this route is not yet a commercial alternative for her existing network. The route can be used only three months per year at the moment.

A big disadvantage are the high costs of newbuilding of suitable ships compared with the costs of newbuilding of the present ships, without ice-class.

More important are the geopolitical consequences. Almost 15 to 30 % of the oil- and gas reserves in the world, that are not yet discovered, are situated in this area. Outside the 200 miles zone this is the open sea, in which every country can explore oil and gas.

Many countries are claiming the right to do so, which causes international tension.

In 2018 the volume of cargo on this route is doubled compared with 2017. Various companies, a.o. the Norwegian Miko, are developing equipment to close holes in the shell of ships from the outside (magnetic “patches” of watertight material). Also the development of propulsion (LNG as fuel, special propellers) is going fast at the moment (for instance 360 degrees turnable Azimuth propellers instead of propeller/rudder combinations).

In the magazine “The Marine Professional” of February 2019, Andreas Gludd, the dock manager of Hempel, wrote an article on paint systems for underwater ships of vessels that are sailing in polar ice. Hempel developed a special coating system and tested this on 150 ships on the Northern Icesea route. Also other coating producers are investigating this. The system developed by Hempel is based on epoxy coating, with an extremely low friction resistance, and strengthened with overlapping glass flakes. This coating bents with the underlying steel, without cracking.

#### 4.3 The world fleet

Hellenic Shipping News Worldwide published in September 2018, an article from which it can be concluded that China has taken over the position of Japan as second large country, with regard to ship-owners.

Greece is still number one but the gap with China is decreasing.

Since 2014 the growth of the Chinese fleet is 34 %, of the Greek fleet 23 % and of the Japanese fleet 2 % (based on gross tonnage).

### 5- The Overland Silk routes

#### 5.1 Number of trains

The growth of the number of transports by rail in the period 2011-2018 (China – Europe v.v.) can be seen in the next table of China Railway Express (details of 2018 – Source: Transport on line 21.01.2019) :

Year	Number of transports China – Europe and Europe - China
2011	17
2012	42
2013	80
2014	308
2015	815
2016	1702
2017	3673
2018	6300

on 29 August 2018 the ten thousandth train arrived in China. At this moment 59 Chinese cities are connected to 49 European cities. In total 73 countries are involved in BRI, of which many instable.

## 5.2 New connections

Regularly new rail routes are put into use.

Some examples:

- Mannheim to Chongqing (end 2018).
- Venlo, Istanbul, Baku (Azerbaijan), Kazakhstan to various regions in China.
- China, Europe via the Russian port Bronka (St. Petersburg) and after that by ship to West Europe or Scandinavia (tested, in use mid 2019?).
- Rotterdam to Kalingrad (Belarus) by ship and after that to Chengdu in China by train (in our opinion there will be more of this kind of multimodal routes in future).
- Milan to Chengdu (from January 2019).

## 5.3 Costs

According to the United Transport and Logistics Company – Eurasian Railway Alliance (UTLC – ERA) the tariffs of rail transport are getting more competitive compared by sea transport (Source: Railfreight 28.12.2018).

This is a direct consequence of the growing balance between west-east and east-west transports and resulted in 30 % lower costs in 2018 compared with 2015.

## 5.4 Subsidies

Probably the subsidies, as mentioned in our book, will be reduced in a short time and fully abolished in future.

From September 2018 only fully loaded trains from China to Europe are subsidized and not, for instance, a train with 40 loaded and one empty container.

The abolition of subsidies (east-west) can possibly have a negative consequence on the volume of transport.

## 5.5 Important rail transit ports

From a report drawn up by transport consultants BSL and UIC it appears that the total volume of containers in transit via Gdansk and Trieste has seriously increased in 2017, compared with 2015.

Port	Transit to hinterland by rail 2017 (TEU)	Increase compared with 2015 (%)
Hamburg	2,333,774	+1
Bremerhaven	1,134,000	+5
Felixtowe	1,000,000	+10
Rotterdam	915,000	+3
Gdank	610,306	+64
Koper	480,681	+13
Antwerpen	476,000	+14
La Spezia	350,000	+12
Genka	320,925	+5
Barcelona	243,605	+14
Triest	181,522	+63
Valencia	171,250	+17
Mersin	145,048	+16
Marseille	139,495	+24

#### 5.6 Border crossing Visoko-Litovsk/Czeremcha

This border crossing between Belarus and Poland was closed in 2011.

End 2019 it will be re-opened as a result of the increased container transport between China and Europe via Belarus.

The border crossing will be used for bulk cargoes which results in an increase in container transports via the Brest/Terespol border crossing which is of vital importance for the BRI project.

Container transport via Belarus increased significant in 2018 (increase 28 % compared with 2017).

## 6- The risks

### 6.1 General

As mentioned in our book, the risk of transport by rail is low.

The risk of sea transport is considerable higher.

This turned out again on ½ January 2019 on the Northsea near Borkum, where the containership MSC Zoe lost 345 containers with large negative consequences for the Dutch West Frisian Islands (“Waddeneilanden”). Furthermore 400 containers on board of the vessel were damaged.

According to the World Shipping Council the average number of containers that is lost overboard is 1390 per year (period 2014/2016). Catastrophes are not taken into account in this.

A second risk is the large number of fires on board of containerships. According to the TT Club every week a minimum of one fire and every 60 days a catastrophic fire develops.

The cause of those fires is often, conscious or not, a misdeclaration of the cargo in a container.

## 6.2 Risk of damage during rail transport

In spite of the fact that most transporters claim that there is hardly no damage sustained until now, there is always a risk.

The advice is to take extra care on the packing and stowage of the cargo in the container and the equipment of the container itself.

Cargo moves different and more during rail transport, compared to during transport by ship and is under influence of other type of shocks.

## 6.3 Theft of cargo

The reason that the small number of thefts only take place on the European part of the route, is the fact that the trains on this part of the route are stopped more then over the (probably also better safeguarded) Asiatic part of the route.

## 7- Transport by road

In paragraph 9 of our book, we have compared three modes, sea transport, transport by rail and air transport.

In the meantime there is a new mode (although not really new, but not often used in the BRI project in the past): Transport by road.

On 13 November 2018 a TIR test ride was executed, between Khorgos, at the Chinese border, and Poland. The truck-trailer combination arrived in Poland on 26 November 2018, after approx. 7,000 km driving.

During the ride there were no disturbances or custom problems.

This testride, executed by Alblas Transport, was a joint initiative of IRU (The International Road Transport Union), CEVA logistics (the former TNT), the Chinese Jetrail and Alblas.

Advantage of this mode is the “door to door” transport.

According to CEVA this mode is 50 % cheaper compared to air transport, at an identical time of 10/15 days and 30/50 % faster then transport by rail, although the costs of road transport are higher then rail transport (door to door).

A big disadvantage of transport by road is the CO2 emission (according to the Worldbank for each ton per mile via road, two third or more then via rail).

DB Schenker announced in November 2018 that the company will devote itself for stronger CO2 reduction goals for trucks with a weight over 7,5 tons (20 % reduction in 2025 and 35 % reduction in 2030). The company will also 50 % of all trucks, with a weight between 3.5 and 7.5 tons, provide with electric propulsion. It is plausible that other companies will follow.

## 8- Cybercrime

Cybercrime (see paragraph 10 Q in our book) is, according to employers, together with business damage, a large risk, as described in the Allianz Risk Barometer 2019.

In 2018 cybercrime was situated on the first place and business damage on the second. In 2019 this was reverse.

Fast rising are climate change, fire, explosion and change of regulations (now on place 3 as a consequence of Brexit, trade wars and import duties).

IUMI and Marsh have investigated 50 countries together. It was found that the maritime sector was not or almost not prepared on the largest risk of the coming ten years, cybercrime and theft of data (source: Risk and Business 20-11-2018).

According to the class society DNV-GL, the number of incidents with Operational Technic (OT) is at this moment larger than the number of attacks on offices.

With OT all programmable control systems of machinery on board of ships is meant.

The number of OT attacks on ships is doubled in 2016, compared with 2015, and four times as large as in 2013.

The largest dangers in the past were the financial situation of the company and their reputation. Now the threat to human life, environment, ship and cargo are the most important.

IMO and various classification societies are taking necessary measures.

A number of those measures are:

- DNV-GL issued a "Recommended Practice" document in September 2016, with advices for shipowners, how to deal with cyberrisks. This document draws attention to crew, processes and technology.
- As from 1 January 2021 the ISM code will be extended with "Maritime Cyber Risk Management" rules for tankers.
- Ditto for all other types of vessels, within a 2 year period after this.

## 9- Blockchain

The port of Rotterdam, ABN-AMRO and Samsung-SDS (the logistic and IT division of Samsung) started a test project together, in order to replace paper documents (for instance container transport from China to Rotterdam, at this moment 25 to 30 documents as a result of all parties involved) by blockchain. This has to result in a large saving of money in time.

Various insurers, shipping companies, logistic companies and port authorities started comparable test projects.

Nevertheless many experts in IT Technology have doubts.

Jean-Paul Rodrique, connected to the Hofstra University in New York, speaker on the TOC America's Supply Chain Conference (13/15 November 2018) is one of them.

During his speech various dangers of this technology were expressed, and his closing remark was:

*"blockchain provides the unchangeable ledger, but what happens if my blockchain password is hacked? "*

(Source: [www.the-loadstar.co.uk](http://www.the-loadstar.co.uk) - 20.11.2018 – The downside for carriers and terminals of a digital supply chain – author Gavin van Marle).

The European Committee issued a proposal for an electronic system (eFTI – electronic Freight Information) on 17 May 2018, but as a result of the high costs for development and implementation and the risk that one of the member states will only partly introduce such a system, there is still a lot of resistance against this proposal.

## 10- New systems of transport

### 10.1 Automatic driving trains

On 19 December 2018 ProRail tested an autonomous train for the first time. This train drove from Rotterdam-Maasvlakte to the German border on the automatic pilot and the test was successful.

In 2019 ProRail will, in cooperation with Arriva, perform the first test with an automatic passenger train in the province Groningen.

Contrary to the use of the autopilot there will, according to ProRail, always be an engine driver on the trains, for unexpected situations, like people on the railway, trees fallen on the railway, etc.

Problem is that, like on the road, the legislation has to be adjusted.

In 2022 China will, during the Olympic Winter Games, use the first automatic HSR passenger trains on the line Beijing – Zhangjiakou, both cities involved in the games. The trains will be driving at a speed of 350 km/hour.

Also on those trains an engine driver will be present but China expects that within approx. ten years the trains will drive without an engine driver.

China is also developing automatic high speed cargo trains.

### 10.2 Hyperloop

Schiphol Airport has joined the Dutch company Hardt in September 2018.

Amongst others it will be investigated whether the hyperloop alternative is a good alternative for short distance flights and for the accessibility of the airport in the future, or not.

In the meantime Hardt received an investment of millions of Euros from Inno Energy, a fund for durable energy. In Delft Hardt has a test-tube with a length of 30 metres, for low speed.

The company wants to construct a 5 kilometre length test-tube for testing at high speed, which will cost Euro 120 million.

## 11- China

### 11.1 Chinese philosophy

Apart from Taoism and Confucianism, mentioned in our book, the Feng Shui philosophy even plays a larger role in the present Chinese society and company culture.

Feng Shui is the philosophy that neutralizes the balance between the two contrasting forces Yin and Yang, amongst others by the position of a building, of doors, walls, etc. Feng Shui is used in the USA and more and more in Europe, by architects, at the request of principals.

## 11.2 Relation China – European Union

The EU has her own transport policy, named Trans European Transport Network (TEN-T). China has, in her third Strategic Partnership document (after 2003 and 2014) in 2018 defined a comparable policy, based on partnership, improvement of the relation China – EU, active participation, transparency and standardisation.

What will the EU do with this?

According to the EU the BRI project is a Chinese initiative and the EU is no part of it, although the developments are followed by the EU.

But this is mainly to develop the TEN-T system and to implement this in the EU and her neighbour countries.

That is why the EU, in November 2018, presented new TEN-T maps to Armenia, Azerbaijan, Moldova and Ukraine. These maps have to be used to make better connections between Europe and Asia.

## 11.3 Economic developments

According to the Worldbank none of the ten fast growing economies is situated on the western hemisphere, but mainly in Asia, where 60 % of the world population is living.

The percentage of luxury goods sold worldwide was in China in 1990 almost zero and in 2017 33 %.

It is expected that this in 2025 will be 44 % (Source Jing Daily 15.06.2017).

According to the Center for Strategic and International Studies the BRI project is no longer restricted to geography or gravity.

The BRI vision includes Africa, Europe, Middle and South America, Antarctica, the Arctic, Cyberspace and even the space itself.

China invests a large amount of money in artificial intelligence, robotics, intelligent machinery, blockchain technology and Ethereum (crypto currency).

The three largest telecom providers in China are at this moment the state owned companies China Mobile, China Union and China Telecom.

## 11.4 Railways

Rail freight published on 8 January 2019, that for the first time the transport of Chongqing to Europe had a larger volume than the other way round.

There had been 1442 trains in total in 2018 of which 728 were east-west and 714 were west-east.

The year 2018 was successful for the BRI railway project:

- there was a spectacular growth of volume;
- alternative routes became more popular;
- new multimodal options were used;
- new routes developed;
- fully automatized rail terminals are under investigation and in Changdu under development.

### 11.5 Inland unrest

The Chinese province Xinjiang borders to eight different countries and has an important role in the BRI project.

The Chinese government has invested a large amount of money in this relative poor province.

Approx. 22 million people are living in this province, of which approx. 50 % Uighurs, an Islamic population, speaking the Turkish language. They live, as a former population of nomads, separated from the Han Chinese people and there are regular serious problems between those two groups of people.

Between 100,000 and 1 million Uighurs are locked up in camps.

It is the question, how the Islamic countries that are involved in the BRI project, will react on this in future.

### 12- Concluding remarks

According to some experts there are a number of factors that show that the Chinese BRI project will get problems:

- China has lowered the expected economic growth for 2018 from 6.6 to 6 %.
- The Chinese population starts to complain that a part of the money spent to BRI is not spent to them.
- The population in the cities is getting older (in Beijing almost 14 % of the population is over 65 years old) and for young people from the countryside it is difficult to live in the city.  
This results in a threat for unemployment.
- The EU policy is understandable, due to the fact that China is not showing transparency, 89 % of the projects financed by China are executed by Chinese companies and only 7 % by local contractors.  
In case of Worldbank projects, the share of local contractors is over 40 %.  
Furthermore the EU has problems with the fact that China is not respecting a number of international standards.
- The USA, Japan and other countries try to undermine the BRI reputation of China.  
Contrary to that Japan and China started a cooperation to transport Japanese products multimodal to Europe (Japan – China over sea and China to Europe by rail).
- A number of countries is worrying that China will be one of the largest, or even the largest economy of the world, in the close future.
- What will be the economic influence of the “Made in China 2025” plan?
- It is not possible to predict what will happen the next years, but the fact that this project will have an important impact on the world is in our opinion clear.