ECONOMIC OVERVIEW AND OPPORTUNITIES
OF SHANDONG PROVINCE
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Cover photo: night view of Qingdao coastline

This report is part of a series of economic overviews of important regions in China, initiated and developed by the Netherlands Economic Network in China. For more information about the Netherlands economic network and its publications, please visit www.zakendoeninchina.org or contact the Dutch embassy in Beijing at pek-eo@minbuza.nl.

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This report provides an overview of the economy of China’s coastal province Shandong; what it is today and in which direction it is heading. We introduce both key cities in Shandong and the roles they play in Shandong’s economy and main industries. We give an overview of the opportunities the region has to offer for Dutch businesses in a wide range of sectors.

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I. GENERAL INTRODUCTION OF SHANDONG

Shandong province (hereinafter Shandong) is located on the east coast of China and it covers a land area of 157,000 km$^2$, with a population of 98 million. It has 17 cities and 137 counties (county-level cities, districts) under its jurisdiction. The land area is almost 4 times larger than the Netherlands and the population is similar to that of the Netherlands and Germany combined. Shandong is the second most populous province and the third largest consumer market in China (China Statistical Yearbook 2015).

Shandong has a well-developed transportation system, as the Beijing-Shanghai Railway, Beijing-Kowloon Railway and multiple high speed railway lines all pass through the province. Shandong is also dotted with 8 civil airports, including Jinan and Qingdao, and 7 sea ports, such as Qingdao Port.

Shandong is an economic powerhouse in China. The GDP of Shandong grew by 8% to 6.3 trillion RMB in 2015, ranking the third in the country after Guangdong and Jiangsu. As one of China’s major agricultural production bases, Shandong is known for the production of grains, fruits and vegetables, oil crops, aquatic products and animal by-products. The total value of Shandong agriculture has been in the top place in China for over a decade consecutively. Shandong is also an important energy base in China. Shengli Oilfield, discovered in 1955, is the second largest of its kind in the country and lies in the north of Shandong. The crude oil produced in Shandong made up one-third of the nation’s total. Moreover, Shandong has 50,000 km$^2$ of coalfields. Shandong Energy Group, a Fortune 500 company, directly manages six coalmining groups in the province and has nearly 200,000 employees.

The industry of Shandong includes traditional sectors such as food, metallurgy, textile, household appliances, chemicals and construction materials, as well as emerging sectors such as automotive, high-speed trains, marine science, electronic information, biopharmaceutical and new materials.

Shandong is one of the cradles of the Chinese civilization. It is the birthplace of a great number of historical and cultural figures who still have influences today on Chinese culture and even the world culture: Confucius, the founder of Confucianism; Mo Zi, the founder of Mohism; Zhuang Zi, the representative figure of Taoism, etc. Shandong abounds with tourism resources, including 4 World Heritage sites (Mount Tai, the Confucian Compound, the Great Wall of Qi, and the Shandong section of the Grand Canal), many historic and cultural cities, key cultural relic protection sites, national scenic areas, nature reserves and national intangible cultural heritages. The people from Shandong are known for their hospitality and therefore the slogan of Shandong province is “Friendly Shandong”.
Business Climate of Shandong

Shandong enjoys a stable, moderate and competitive business climate compared with other economic leading provinces. In 2015, with an annual increase of 8.0%, Shandong’s GDP output reached a total of 6.3 trillion RMB, ranking third after Guangdong and Jiangsu.

Nominal GDP Shandong 2000-2015 (billion RMB)

(Source: www.stats.gov.cn, 2015)
Shandong GDP Output 2015 (billion RMB)

In China, Shandong has long been active in foreign trade and is one of the main exporters of China. In 2015, Shandong’s total import and export volume was 241.7 billion USD, ranking 6th place throughout China. According to statistics of the General Administration of Customs, in the first half of 2016, U.S., EU, ASEAN, South Korea and Japan were the largest export destinations of Shandong products, accounting for 63% of the province’s total export; South Korea, ASEAN, EU, U.S., Australia, Brazil and Japan were the largest exporters to Shandong, contributing 64% of province’s total import.

Export & Import 2015 (billion USD)

(Source: www.stats.gov.cn, 2015)
The Foreign Direct Investment (FDI) in Shandong can also illustrate the competence of business climate of the province. In 2015, the accumulated foreign investment in Shandong reached 215.5 billion USD, ranking 4th after Jiangsu, Guangdong and Zhejiang. Hong Kong, Korea, Taiwan, Japan, U.S., European Union and ASEAN were the main investors to Shandong.

<table>
<thead>
<tr>
<th>Utilized FDI 2015 (billion USD)</th>
<th>Accumulated FDI 2015 (billion USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The rest of China</td>
<td>Shandong</td>
</tr>
<tr>
<td>16.30</td>
<td>13%</td>
</tr>
<tr>
<td>109.97</td>
<td>87%</td>
</tr>
</tbody>
</table>

(Source: www.stats.gov.cn, 2015)

Shandong has rich labor force based on its 98 million population, and the average labor cost in Shandong is competitive compared with Guangdong, Jiangsu, Zhejiang and other well developed areas.

**Average Annual Wage of Employed Persons in Urban Areas 2014 (RMB)**

(Source: www.stats.gov.cn, 2015)
Highlights of the Shandong provincial government development plan 2016 – 2020

In 2015, the central government and provincial government have announced the 13th ‘Five-Year Plan’ (2016-2020). According to the plan, from the year 2016 to 2020, the Shandong provincial government has specified 27 main targets in four main areas, namely economic development, innovation drive, people’s welfare, and resource and environment. And some key aspects are as below,

- To increase the GDP to 9 trillion RMB in 2020
In 2020, it aims to double the GDP of 2010 to 9 trillion RMB and the GDP per capita will be double of that in 2015, reaching 15,000 USD, with annual increase of 7.5%.

- To increase the urbanization rate to 65%
By the end of 2015, around 3 million people in Shandong lived in poverty (provincial standard). The plan aims to lift all of them out of poverty by 2018, and increase the urbanization rate to 65%. It focuses more on people’s daily life and welfare. For instance, by 2020, every 1,000 senior citizens will possess 40 elderly care beds; every family will have a qualified family doctor, and an average life expectancy of 79 years.

- To accomplish an above-average economic growth and industrial level
By 2020, the equipment manufacturing industry is expected to contribute over 30% revenue of the province’s industry; the percentage of the tertiary industry in total GDP should increase to above 55%. The strategic emerging industries include:

1. New Energy: wind power
2. New Material: biomaterial, high performance material
3. New Information Technology: the Internet of Things, cloud computing
4. New Medicals and Pharmaceuticals: medical informatics, biopharmaceuticals
5. Marine Economy: fishery processing and cold-chain logistics
6. High-end equipment manufacturing: robotics, high-end agriculture equipment

- To enhance infrastructure systems
It lays emphasis on five main systems, including a comprehensive transportation system, modern energy system, modern water conservancy system, information network system and urban and rural infrastructure support system. By 2020, all the cities in Shandong are connected with high-speed trains and all the counties are connected with highways. Around 40 more domestic and international flights will be available, and the seaport throughput capacity is expected to reach 1.5 billion tons. The “Internet+” project will be further promoted, to build a ‘smart’ Shandong.

- To improve environment
In pursuit of green and low-carbon development, by 2020, the PM2.5 density in Shandong cities will be 35% lower than the level in 2015, and the air quality will be improved by 50% compared to 2010.

- To accelerate cultural industry development
To fully take advantage of the abundant cultural resources in Shandong, by 2020, the cultural industry will be developed into a pillar industry in Shandong.

The plan is a guideline for Shandong’s economic and social development in the next five years. With particular focuses on ecological and sustainable development, and transformation and upgrading of current industries, foreign cooperation has been specifically stressed in subsequent documents by the provincial government.

*The five-year plans of People’s Republic of China (PRC) are a series of social and economic development initiatives.*
Cities in Shandong

Shandong is divided into 17 cities as below.

Jinan
GDP 2015: 613 billion RMB / Population 2014: 7.06 million

Known as the Spring City, Jinan is the capital city of Shandong, and it is one of the first three China software cities honored by state government, together with Nanjing and Chengdu. The city focuses on logistics, water management, ICT, health care and machinery equipment.

Qingdao
GDP 2015: 930 billion RMB / Population 2014: 9.05 million

Qingdao is the economic center of Shandong province, and one of the first open coastal cities in China. It is home to the world’s 7th biggest seaport in throughput handling and a number of well-known Chinese brands for example: Tsingtao Beer, Haier and Hisense. Qingdao is an international business hub; it is the base for many foreign companies in China and a total of 126 top 500 multinationals have invested in the city. It also plays a key role in setting up the free trade agreement among China, Japan and South Korea. Many infrastructure projects are currently underway, such as the harbor expansion, construction of a new airport and the metro network. Featured as marine economy, the city focuses on the following industries: logistics, shipbuilding & marine technology, ICT, water management, health care, wealth management, tourism and fishery.

Yantai
GDP 2015: 644 billion RMB / Population 2014: 7.00 million

Yantai is the largest industrial city in Shandong. A large number of auto parts manufacturers have set up facilities in Yantai, among them several Dutch companies. GM invested in a large production base for passenger cars in Yantai. The University of Groningen plans to establish a presence in Yantai; from 2017 it will be the first Dutch university to open a branch campus in China. Yantai is also a large producer of apples and grapes. The city focuses on the following industries: logistics, shipbuilding & marine technology, chemical, automotive, electronics & IT, and agro-food.
Weifang

Located in the center of Shandong, Weifang focuses on logistics, agriculture, machinery equipment and chemical industry. Shouguang, a prefectural city of Weifang, hosts the annual China International Vegetable Technology Exposition, the most important vegetable fair in China. It is regarded as the vegetable capital of China. Qingzhou, another prefectural city of Weifang, is famous for its horticulture sector.

Weihai
GDP 2015: 300 billion RMB / Population 2014: 2.81 million

As the closest Chinese territory to Korea, Weihai is very active in Sino-Korean trade promotion and investment. And it focuses on fishery, shipbuilding, yacht building, food processing and health care.

Regional Development Zone and Areas

Currently, there are over 150 development zones in Shandong province, at provincial or national level. It consists of 12 state level economic and technological development zones, 2 bonded ports (Qingdao Port and Yantai Port), 2 comprehensive bonded zones (Jinan and Weifang), 3 export processing zones (Qingdao, Qingdao West Coast and Weihai), as well as 137 provincial level economic development zones.
The Netherlands and Shandong

The bilateral trade between the Netherlands and Shandong has increased tremendously in the past two decades. As the gateway to Europe, the Netherlands is a very important hub for the transit trade between Shandong and its distributors throughout the EU market. In 2014, the trade value between the Netherlands and Shandong totaled 4.65 billion USD, the main product categories are machinery equipment, agricultural and food products, textiles, chemicals and pharmaceuticals.

**Government Relationship between the Netherlands and Shandong**

The highlight of official Dutch visits to Shandong province is when Queen Beatrix and Prince Claus visited Qufu, the hometown and birthplace of Confucius in 1999. Shandong province has sister relationship with the province of Noord Holland since 1995 and a friendship relationship with the province of Gelderland since 2005, and both Dutch provinces have visited Shandong province on a regular basis with business delegations. In recent years, more delegations at provincial and municipal levels from Shandong also visited the Netherlands. Some other (economic) cooperation has also been investigated, signed and/or established. In March 2015, University of Groningen announced to start a campus in Yantai, east of Shandong Province, in cooperation with China Agriculture University. And in 2016, Food Valley NL and WUR signed a cooperation agreement with the city of Weifang.

<table>
<thead>
<tr>
<th>Established Year</th>
<th>Relationship</th>
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<tbody>
<tr>
<td>1995/06</td>
<td>Shandong Province &amp; Province of Noord Holland Sister Relationship</td>
</tr>
<tr>
<td>1998/12</td>
<td>Qingdao &amp; Velsen Sister Cities</td>
</tr>
<tr>
<td>2005/09</td>
<td>Shandong Province &amp; Gelderland Province Friendly Relationship</td>
</tr>
<tr>
<td>2005/05</td>
<td>Rizhao &amp; Dordrecht Economic Cooperation Agreement Signed</td>
</tr>
<tr>
<td>2011/12</td>
<td>Weihai &amp; Alkmaar Economic Cooperation Agreement Signed</td>
</tr>
<tr>
<td>2013/05</td>
<td>Qingdao &amp; The Hague Economic Partnership Cities</td>
</tr>
<tr>
<td>2016/09</td>
<td>Dezhou &amp; Westland Economic Cooperation Agreement Signed</td>
</tr>
</tbody>
</table>

*Dutch companies in Shandong and Shandong companies in the Netherlands*

Currently, over 60 Dutch companies have invested in Shandong, half of which are located in Qingdao, and they are active in different sectors including logistics, agriculture, machinery equipment and (petro)-chemical. Most of them are SMEs; large Dutch companies include Rijk Zwaan, Vopak, DSM, Akzo Nobel, etc. In 2014, 25 companies from Shandong have also set up representation in the Netherlands.

*Dutch government economic network in Shandong*

The Dutch Economic Network in China consists of the Embassy in Beijing, the four Consulates-General in Chongqing, Guangzhou, Hong Kong and Shanghai, and six Netherlands Business Support Offices (NBSOs) in Chengdu, Dalian, Jinan, Nanjing, Qingdao and Wuhan. In Shandong, two NBSOs were established respectively in 1996 in Jinan, capital city of Shandong, and in 2009 in Qingdao, the main economic center of the province.
II. PROMISING SECTORS AND OPPORTUNITIES IN SHANDONG

Shandong shows strengths in agricultural production, manufacturing, energy, chemical and pharmaceutical industries and ICT. Shandong is in a good position geographically; enjoying a 3,000-kilometer coastline which is 1/6 of country’s total and has a favorable location in between Beijing and Shanghai. It is a rich province with oil fields, gold deposits and other natural resources.

Opportunities in Shandong include, but are not limited to, sustainable development, planning and design, restructuring inefficient industries, supporting Chinese companies go global, modernizing the agro-food, life sciences and elderly care sectors.

Agro-food
As the most important agriculture province of China, Shandong is one of the largest granary provinces and the largest vegetable grower in China, with the largest cultivation area of greenhouse vegetable. It is also one of the main powers in terms of animal husbandry industry. The agriculture industry is among the first industries for Dutch companies to start with in Shandong. Dutch seed companies, fruit and vegetable varieties, and other relevant companies have been well known to local growers and farmers. Shandong is currently exploring ways to modernize agriculture and industrialization, which creates opportunities for foreign cooperation, technology and knowledge exchange. A number of modern agriculture pilot projects have been built in the province, in some of which Dutch expertise is applied.

Fishery
Shandong is rich in marine resources. Its offshore area makes up 37% of the total surface area of the Bohai and Yellow seas, with a shoal area accounting for 15% of the nation’s total. Shandong leads the country in the production of prawns, shellfishes, abalones, sea slugs and urchins. Shandong government aims to strengthen regional differentiations, accelerate industry clusters in fishery and encourage innovation in fish breeding, distant fishery and fish processing. China Fisheries & Seafood Expo is a leading exhibition in the fishery industry in Asia, which is held in Qingdao every year.

Water Management
Water management has been high on the priority list of the Chinese central government as a result of the rapid economic development and urbanization in the past two decades. Mainly relying on groundwater, rainfall and the Yellow River, the water resource in Shandong is scarce. It brings big challenges and opportunities for seeking new sources of water supply and dealing with polluted water. The ‘sponge city’ projects, which aim to solve or remit typical problems related to water in urban areas, have been carried out in many places in China. Jinan and Qingdao were among the cities selected as the state-level pilot cities for sponge city construction. The challenges in water management create opportunities for relevant Dutch sectors that are specialized in water recycling technologies and facilities, waste water treatment, and sea water desalinization.

Logistics
In the last decade, logistics has become one of the pillar industries in Shandong. The Shandong government encourages developing modern logistics by introducing new technology, management models and opening the market to foreign companies. In recent years, Shandong has launched a series of preferential tax measures to boost development of the local logistics industry. The focus is on the development of automation logistics including RFID, Electronic Data Interchange (EDI), GPS, automatic sorting of goods, mobile terminals, Internet of Things application of emerging technologies, logistics management automation
and carrying out container and pallet rental recycling business. Besides freight forwarding, shipping, cold chain logistics and modern warehouse management system sectors have great potential for Dutch companies.

**Information and Communication Technology (ICT)**
The ICT sector is among the pillar industries of Shandong. The main products include LED TV sets, electronic components, servers, semiconductors, printers, cellphones, computers, software products and services. Several key research projects have been highlighted in the development plan, including IC technology, key technology and application of Internet of Things, cloud computing technology and application, and demonstration projects e.g. wireless city, NGN (next generation network), car connectivity, etc. There are opportunities for Dutch companies to outsource their products and services related to ICT to Shandong, as well to have further cooperation with local companies and R&D organizations on export of high-end products and technology.

**Marine Equipment and Engineering**
Shandong has a coastline of over 3,000 km and 1,150 km of inland navigable waterways. It has also the most concentrated seaports in China. With geographical advantages (center of Beijing and Shanghai, proximity to Korea and Japan), vigorous shipping activities and a strong industrial base, Shandong is traditionally recognized as one of the most competitive provinces in terms of shipping and shipbuilding industry in China. In recent years in Shandong, offshore marine equipment and engineering is one of the new development sectors due to the fast rising demand for offshore oil and gas exploitation. Shandong became one of the top offshore marine equipment production bases in China together with Shanghai, Jiangsu, Liaoning and Zhejiang. Opportunities for Dutch companies are to export marine equipment and key component to Shandong, and to help local companies improve capabilities of vessel design and R&D, upgrade marine supporting industry, especially key marine equipment and components.

**Health Care**
Shandong is the second most populous province in China. As a result of accelerated urbanization and rising living standard, the shortfall and geographically unbalanced distribution of public medical resources have been highlighted increasingly in the province. Shandong is also stepping into an aging society. Shandong has been making efforts to establish a sound elderly care service system by increasing government investment, encouraging and supporting social resources to build and operate elderly apartment, nursing homes, and other service institutions. Furthermore, Shandong province is a main production base of pharmaceutical ingredients, clinical medicines, medical devices and disinfection cabinets. Dutch companies can participate in the local procurement of medical equipment and devices, and cooperate in high-end elderly care institutions construction, operation and management.

**Machinery Equipment**
The Equipment and machinery manufacturing industry is one of the pillar industries in Shandong province. Shandong has a leading position in several segments, including agricultural machinery, engineering machinery, machine tools, petroleum equipment and woodworking tools. Its output of agricultural vehicles gains a market share of nearly 80% in domestic market, and it’s also one of the main manufacturing bases of engineering machinery in China. Dutch companies can outsource machinery equipment and parts to Shandong with competitive quality and prices, or to set up wholly owned or joint manufacturing/processing bases in Shandong to supply the Chinese and international markets. There are also opportunities for Dutch companies to cooperate in technology transfer and industrial know-how, and export Dutch machinery equipment for the Chinese high-end market.
(Petro-) Chemical
Shandong’s (petro-) chemical industry has been in the leading position in China for a long time. Main chemical products in Shandong include high concentration fertilizer, caustic soda, radial tire and soda ash. Furthermore, Shandong is home to China’s second largest oil field, Shengli Oil Field, located in the north of the province. Shandong province has formed a complete oil industrial chain, from crude oil production, transportation and oil refinery, to petro-chemical products. Shandong province is also a main producer of pharmaceutical chemical materials. Dutch companies can make use of local production capacities and upgrade it to a higher level with Dutch expertise. In addition, cooperation on R&D of chemicals, and related sectors e.g. environmental protection of chemical production, will also offer opportunities.

Waste Management
The volume of waste water discharged in Shandong ranks among the top provinces in China. There is a demand for introducing innovative and high efficient waste management technology especially in water treatment and city/industrial solid waste treatment. In regard to waste management, the Shandong provincial government looks for foreign cooperation in the implementation of the polluter pay system, pollutant emission reduction targets and control, urban sewage and garbage disposal facilities construction, water pollution prevention, urban air, noise and heavy metal pollution control, hazardous waste and soil pollution management and nuclear radiation supervision capabilities.

Creative Industry
To fully take advantage of the abundant cultural resources in Shandong, by 2020, the cultural industry will be developed into a pillar industry in Shandong, including digital publishing, film and television production, advertisement design, mobile multimedia, cartoon game, entertainment and exhibitions. Qingdao Oriental Movie Metropolis, a film and television industry project funded by Wanda is ready to host Hollywood film productions. These bring opportunities for Dutch companies in fields of film and TV program productions, digital technology and products, and games as well. Meanwhile, the continuous urbanization process in Shandong presents opportunities for Dutch companies in urban planning and management, and architecture.
III. DUTCH ECONOMIC NETWORK IN CHINA