THE CHINESE DREDGING AND LAND RECLAMATION MARKET

A market research on the opportunities for Dutch organizations in the Chinese dredging and land reclamation market

Picture 1: Land Reclamation Project of Caofeidian, People's Republic of China. Picture taken during a visit on 27-11-2008

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Management summary

With China becoming known as the world's factory, as well as a country with an insatiable appetite for raw materials and growing consumption internally China's port sector is hurried to continue expanding capacity to support trade and economic growth. Besides, the pace of urbanisation in China will have a fundamental effect on all businesses. Unlike Europe and the US, China is still a developing market. Urbanisation does more than just drive growth; it also makes it more stable. As the global financial crisis showed, with growth increasingly driven by domestic urbanisation, China is less dependent on more volatile and slower growing export markets to keep its economy afloat. The booming need for port expansion (coastal and hinterland), industrial and urban development offers potential business opportunities for the Dutch water sector, which can offer support and solutions in dredging and land reclamations for global trade, urban development, coastal defense, energy supplies and leisure/tourism.

Purpose of the research

This research is conducted for the Economic and Commercial Department of The Embassy of the Kingdom of the Netherland in Beijing. The Embassy proposed to do a research into the Chinese dredging and land reclamation market with the purpose of port development. The research contributed to the Embassy's understanding of the developments in the Chinese dredging and land reclamation by taking into consideration China's port governance

Research approach

This thesis is an exploratory research with a qualitative nature. The research particularly aims at a better understanding of the Chinese dredging and land reclamation market and feasibility for more extensive study in the future. The literature study started from the perspective of the macro environmental PESTEL framework and elaborated on the political and legal factors on an in-depth basis. The influences of these factors were taken into account regarding the transformation of the construction market and China's port governance. Finally, conclusions and recommendations were made regarding the best practices for Dutch marine contractors in approaching the Chinese dredging and land reclamation market.

Conclusions and Recommendations

Overall, it will be a difficult task for Dutch marine contractors to get a foot on the ground in the Chinese dredging and land reclamation market. Although the port construction market is opening up and transforming due to decentralization measures the Chinese government intervenes with more regulations to protect its market from foreign contractors. Because of the legal system with its taxes and licenses it is extremely hard for a foreign marine contractor to participate in a profitable project. The threats in the Chinese dredging and land reclamation market are not compensated by the opportunities at the moment. But from a long-term perspective, the developments of the dredging drivers offer a bright future and positive outlook for new business opportunities in the Chinese dredging and land reclamation market. As such, the Dutch marine contractors need to prepare to invest in a long-term relationships with all the relevant stakeholders. This is an essential basic before Dutch marine contractors can benefit from the prosperous Chinese dredging and land reclamation market. As such, to increase the chances of becoming successful, the Dutch marine contractors should form a strategic alliance in approaching the Chinese dredging and land reclamation market. The Embassy of the Kingdom of the Netherlands should support this process by using its mediation and lobbying capabilities regarding the relevant tax and license issues.

Preface

This report is the result of a research project carried out at the Embassy of the Kingdom of the Netherlands in Beijing. For a 4-month period I stayed in China to study the ins and outs of the Chinese port industry. More specifically, I focused on China's port governance and the relevant opportunities and threats for Dutch marine contractors that want to be active in this Chinese market. This research project in China served as the foundation for my bachelor graduation project at the University of Twente. Besides this thesis a special market report was published and handed out to Dutch marine contractors.

Special thanks goes out to my supervisors Mr. Huub Lavooij and his successor Mr. Albert de Haas, responsible for the Transport and Water Attaché at the Economic and Commercial section at the Embassy of the Kingdom of the Netherlands. They supported me during this internship in finding my way in a gigantic Chinese market.
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List of abbreviations

CPC : Communist Party of China
CIECC : China International Engineering Consulting Corporation
CPPCC : China's People's Political Consultative Conference
GDP : Gross Domestic Product
MoU : Memorandum of Understanding
MOF : Ministry of Finance
MOLR : Ministry of Land and Resources
NGO : Non-governmental organization
NPC : National People's Congress
NWP : Netherlands Water Platform
NDRC : National Development and Reform Commission
PBC : People's Bank of China
PPP : Purchasing power parity
SEZ : Special Economic Zones (SEZ's)
SEPA : State Environmental Protection Administration
SOE : State Owned Enterprise
TEU : Twente feet Equivalent Unit

H1 Introduction

In this first chapter the research is introduced by providing background information according to the party and principal behind this research. Thereafter, the context and purpose of the research will be stated followed by the research questions, research design, and social and scientific relevance of the research. Via the research questions this first chapter will provide the foundation for the literature review.

1.1 Background

The party and principal behind this research is the Economic and Commercial department of the Embassy of the Kingdom of the Netherlands situated in Beijing (China). The Economic and Commercial department represents the Dutch Economic Network that covers several regions in China, consisting of the economic sections at the Embassy and consulates, Netherlands (Agri-)Business Support Offices and the Netherlands Foreign Investment Agency. The Economic and Commercial department has two main goals: promoting Dutch exports to China and facilitating effective and profitable operations of Dutch businesses and investments in China. Instruments to achieve these goals are: market scans for individual companies to assess their chances on the Chinese market; organizing trade missions to China, matching Chinese demand with Dutch supply, often together with Dutch government officials, including the Sino-Dutch links between Provinces and Municipalities; visiting central and local authorities to promote Dutch business interests; etc.

As part of the activities of the Economic and Commercial department one subsection is focussing on Transport, Public Works and Water management. The Netherlands Ministry of Transport, Public Works and Water Management has apart from in Europe stationed attachés also attachés in the US, Japan, and P.R. China. The attaché promotes Dutch interests in the ministerial policy areas, coordinates and facilitates collaboration efforts with Chinese ministries and supports trade and business with regards to transport, water and infrastructure. Transport concerns the aviation, airport, maritime and traffic management sectors. The Transport and Water attaché maintains close relation with the Ministry of Transport, Public Works and Water Management and the business community in the Netherlands as well as in P.R. China. There are active cooperation agreements on basis of Memorandum of Understandings (MoUs) with the Chinese ministries of Transport and Water Resources. The attaché establishes contacts at request, prepares meetings, collects information, gives presentations and publishes about developments in P.R. China and opportunities for both the Ministry and businesses.

In order to further strengthen the competitiveness of Dutch companies within the Chinese market, and benefit from China's economic growth and progress, the Economic and Commercial department of the Embassy introduced a cluster approach. By entering markets in clusters, offering expertise as a non-stop-shop, Dutch companies can better compete with other countries on the Chinese market and increase their Chinese market share considerable. This cluster approach is shaped by a strong cooperation between the Embassy and the Netherlands Water Platform (NWP). The NWP unites the Dutch water sector that offers a broad range of expertise, from comprehensive plans for coastal and port development, to tiny membranes for water purification. And from sanitation to waterworks and education. For centuries, the Dutch have been involved in large international projects. The NWP is a comprehensive network, consisting of members from private companies, governments, knowledge institutes and non-governmental organizations (NGOs), acting as a centre of information on water expertise, policy developments and market opportunities. But the NWP is more than an information source, the organisation also initiates, coordinates and executes projects for its members, such as trade missions, exhibitions and conferences. In this way it is possible to offer the Chinese counterparties a more comprehensive package than would be the case when operating alone.

Meanwhile, the Embassy has quite a clear view on the water sector in China and tries to match the needs of the Chinese water sector with the strengths of the Dutch water sector. The strengths of the Dutch water sector are categorized as follows:

- Clear water and water purification. For China as a developing country clear water is of life importance. China needs water for people, for agriculture, for industry and for the environment.
- International cooperation. Major water challenges require difficult solutions. Dutch water experts participate and are involved in many water projects in China.

- Governance. With high densely populated delta areas, like the Yangtze and Pearl River delta, vulnerable to climate changes and other threats, China can profit from the Dutch experience in managing, planning and developing coastal areas and delta regions.
- Land & Water. Dredging, hydraulic engineering, building with nature, flood prediction systems, storm surge barriers, floating houses and land reclamations. Activities that are all necessary to protect China's citizen and economic growth.

However, the intelligence of the Embassy regarding the Chinese Land & Water area, as stated above, is considered to be inadequate. Therefore, the Economic and Commercial department of the Embassy proposed to do a research regarding the Chinese Land & Water area. The research should contribute to a better understanding of this business area and has to provide more insight in the opportunities and difficulties for the Dutch water sector. As such, the researcher is given the assignment to perform an exploratory research into the Land & Water market of China with a special focus on dredging and land reclamation activities with the purpose of port development.

1.2 Context

China's post 1949 economic development was characterised by central planning, heavy industry in the style of the Soviet Union and political episodes such as the Great Leap Forward and the Cultural Revolution. Government policies kept the Chinese economy relatively stagnant and inefficient, mainly because most aspects of the economy were managed and run by the central government (and thus there were few profit incentives for firms, workers and farmers), competition was virtually non-existent, foreign trade and investment flows were mainly limited to Soviet bloc countries, and price and production controls caused widespread distortions in the economy. Chinese living standards were substantially lower than those of many other developing countries (Morrison, 2009). However, a change of leadership (due to the death of Mao Zedong) in 1978 introduced an open market policy that led to China's post-1978 economic reforms.

The post-1978 economic reforms focused on the development of China's coastal region and concentration of infrastructure investments in specifically designated areas which had free market properties. These areas are the so called Special Economic Zones (SEZ's). The government established the first four SEZ's along the coast for the purpose of attracting foreign investment, boosting exports, and importing high technology products into China. Coastal cities have been called to act as 'engines' in economic growth and made use of the sea in connecting China to the global economy (Han, 1999). Additional reforms, which followed in stages, sought to decentralize economic policymaking in several sectors especially trade. Economic control of various enterprises was given to provincial and local governments, which were generally allowed to operate and compete on free market principles rather than under the direction and guidance of state planning. Additional coastal regions and cities were designated as open cities and development zones, which allowed them to experiment with free market reforms and to offer tax and trade incentives to attract foreign investment. These measures resulted in an explosion of international trade that supported China's economic growth. During the reform period (1979-2010), China's average annual real Gross Domestic Product (GDP) grew with an impressive 9.77% (Bloomberg, 2010).

Chongqing to Shanghai	Distance (miles)	Transit Time (Days)	Cost (US$, 20 ft-container)
Road	1300	3-4 (40 hours)	$1500
Rail	1600	7 till 10	$540
Barge	1500	8(11 upriver)	$315

Table 1: Comparative costs and time to transport a Twenty feed Equivalent Unit container (TEU) from Chongqing to Shanghai. ***Source: APL, Inc. Table indicates why inland water transportation is so important for the supply chain in China. It shows estimated costs and transit time to move a 20-foot container from Chongqing to Shanghai, a distance of 2.575 kilometres.***

The ensuing prosperity of China's coastal regions meant that the post-1978 economic reforms became more deeply embedded in China's coastal regions than in its central and western regions. This caused a disparity in the development between China's coastal and interior regions. In 2000, the government started a 'Go West' policy that proclaimed a commitment to bridge the growing regional divide between China's coastal region, which have flourished under the economic reforms of the last 30 years, and its land-locked western provinces,

which have remained largely untouched by the reforms. The 'Go West' policy tried to stimulate economic development with tax reductions and other favourable economic measurements. As a result, China's traditional labour intensive manufacturing base, that suffered from increasing production and labour costs in coastal regions, are moving their plants to or setting new plants in the country's interior in an attempt to try to cut costs. Deeper into China's interior are labour costs and land values smaller but infrastructure in many parts of the interior are still primitive and unreliable. That is why especially the cities along the Yangtze and the Pearl River can benefit from the 'Go West' policy. The Yangtze and Pearl River estuaries offer an advantageously environment by shipping manufactured goods directly from river ports to seaports with overseas destinations. The costs of inland shipping are still much cheaper than the costs of road and rail transport (see table 1), while water transport takes a longer time than truck transport; costs are almost 80% less. However, the Yangtze and Pearl river estuaries play an important role in the strategy to develop the central and western provinces of China.

Due to the 'Go West' policy the economic gap between China's east and west has narrowed since 2004. The country's strategies for developing the west, revitalizing central China and reforming rural areas have been effective but led to limited geographical rebalancing in China's growth toward its western regions. But since the start of the global financial crisis (2008) China has directed a large portion of its stimulus package to the central and western regions in an effort to improve economic development, lift incomes, ease social tension and bring prosperity to an impoverished region (Morrison, 2009). The major impact of the crisis on export industries in a number of eastern coastal provinces had challenged the idea of the dominance of exports from these regions as a sustainable driver of China's growth. Now more resources are invested into developing the inland water transportation systems as it is seen as an integral part of the comprehensive transportation system in China. A national inland waterway and seaport system with high-class waterways and main coastal ports forms its core. The construction of high-class waterways and coastal ports will raise the capacity of the integrated transportation system.

So, riding on the country's position as the world's factory, as well as the insatiable appetite for raw materials and growing consumption internally China's port sector is hurried to continue expanding capacity to support trade and economic growth. Besides, the pace of urbanisation in China will have a fundamental effect on all businesses. Unlike Europe and the US, China is still a developing market. Urbanisation does more than just drive growth; it also makes it more stable. As the global financial crisis showed, with growth increasingly driven by domestic urbanisation, China is less dependent on more volatile and slower growing export markets to keep its economy afloat. The booming need for port expansion (coastal and hinterland), industrial and urban development offers potential business opportunities for the Dutch water sector, which can offer support and solutions in dredging and land reclamations for global trade, urban development, coastal defence, energy supplies and leisure/tourism (IADC, 2010).

1.2.1 China's emerging economy in figures

As a result of China's open door policy and accompanying economic reforms in 1978 China became an emerging economy. In 2010 China climbed one place higher from the number three positions to overtake Japan as the second largest economy in the world after the United States. The achievements of the Chinese economy in the last few years have had a significant impact on economic superpowers of the world. It surpassed Germany as the biggest exporter for year 2009 with exports of $1.2 trillion against Germany's $1.17 trillion exports (Economist, 2011). The country is the second largest importer of crude oil following the United States and the largest importer of iron ore and copper. With such spectacular numbers, the Chinese economy is expected to show a consistent growth in the coming decades.

The GDP of China has been growing at an average pace of 10% every year since 1978. Although GDP figures of the last decades are impressive, the global economic crisis that started in 2007/2008 began to reduce China's growth rate. In the face of forecasts that this might drop below the rate at which school leavers can be absorbed by the growing economy (7%-8%) the government decided to pump 4 trillion RMB (around $586 billion) into the economy in the form of an economic stimulus package consisting largely of investments in fixed infrastructure and human capital (Xiaochao, 2009). Think about the upgrading of infrastructure like roads, railways, airports, harbours and China's power grid. This investment package should also contribute to the improvement of problems such as low efficiency, a low technological level and low added value in general. And

China continues investments as the 12th Five-Year Plan period (2011-2015) budgets another 10 trillion RMB (around $1.465 billion) of investment for further development of national strengths and its people's prosperity (Xinhua, 2011).

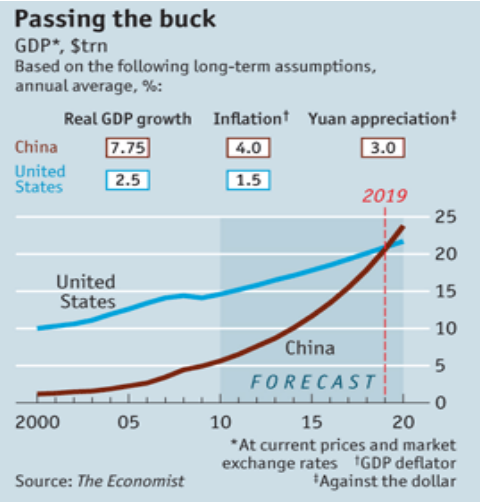

Figure 1: China's economy could overtake the U.S. economy by 2019

When GDP is measured using purchasing power parity (PPP) exchange rates that reflect the actual purchasing power of a country's currency, China has the world's second largest economy after the US (Economist, 2011). On a per capita basis, however, China must be considered as a lower middle-income country with a per capita GDP roughly one seventh that of the US. According to the World Bank, China's per capita GDP is $3,744 as of 2009. Per-capita in de U.S is $45,989 in 2009. But still, China has gone from a poor, backward economy to an upcoming world power. Discussion moves on if China's economy will overtake the U.S. top position in the future. According to the Economist (2011) China's economy could overtake the United States economy by 2019 (figure 1). The posting says "Absent a total disaster in China, the transition will take place, and that right soon. Why? Well, China remains far behind the developed world in per capita terms, and because there is plenty of catch-up left to accomplish, there's plenty of room for rapid growth. And China's population is enormous. It has over four times as many people as America, and so its output per capita only needs to be about a fourth of America's to match it in total size."

1.3 Purpose of the research

The purpose of this research is to contribute to the Embassy's understanding of the Land & Water business area in China. As the Land & Water area covers a large number of subjects that does not fit with the timeframe of this bachelor thesis the research subject will be limited to the Chinese dredging and land reclamation market with the purpose of port development. The research will narrow down from a macro perspective understanding of the Chinese dredging and land reclamation market to get a better understanding of how Dutch contractors can do business in this market.

Therefore, the research will be divided into three parts with a specific objective. The first part will focus on a macro level approach of the Chinese dredging and land reclamation sector. This macro analysis should provide insight in the factors that influence this market providing new opportunities and threats. Secondly, a more in-depth analysis of those macro factors that influence China's port governance should provide more transparency regarding the most decisive stakeholder and difficulties in China's port planning and control. Finally, the third and last part will elaborate on the best practices for Dutch contractors in approaching the Chinese dredging and land reclamation market.

1.4 Problem definition

From the stated background, context and purpose of the research in the previous paragraphs a problem definition is established. The problem definition is stated as follows and embraces the need for this research project:

"The Economic and Commercial department of the Embassy of the Kingdom of the Netherlands has a lack of insights and understanding of China's port governance to fulfill their two main tasks: promoting Dutch exports to China and facilitating the effective and profitable operations and investments of Dutch marine contractors in the Chinese dredging and land reclamation market"

In the journey to provide a solution to this problem definition the literature review will set out recent or historically significant research studies, company data, or industry reports that act as the basis for the proposed study (Cooper, 2006). The literature review should provide the research with the most relevant and

important aspects that form the basis for an effective approach and basis for the proposed study. The research questions will be stated hereafter and guide the literature review. Based on the problem definition and accompanying research objectives the outcomes of the research should provide a good understanding of the Chinese dredging and land reclamation market such that the Embassy of the Kingdom of the Netherlands can support and facilitate Dutch marine contractors that want to do business in China.

1.5 Research questions

Since the purpose and problem definition are stated in the pervious paragraphs its time to translate it into a main research question. According to Cooper (2006) the research question can be seen as a fact-oriented, information-gathering question. It should fit the need to resolve the problem definition. The research questions are constructed in such a way, that together they provide an answer to the central problem definition that fulfills the research purpose. As such, this led to the following research question:

"What business strategy do Dutch marine contractors have to apply in the Chinese dredging and land reclamation market taking China's port governance into consideration?"

To get an answer to the main research question various sub-question are formulated. The sub-questions are crafted from the main research question. Answers to these sub-questions should contribute to the solution of the main research question. The sub-questions are independent, that is, one sub-question can be answered without knowing the answer to another sub-question. They structure the report and function as guidance for the literature review. Therefore the research questions are formulated as follows:

1. What is the influence of macro-environmental factors on the opportunities and threats within the Chinese dredging and land reclamation market?
2. What is the influence of China's port governance on the Chinese dredging and land reclamation market?
3. What is the influence of China's legal system on foreign marine contractors?
4. What are the different strategies Dutch marine contractors can consider in utilizing their competitive advantage?

The first sub-question aims at the first objective as it is stated by the purpose of this research. It traces the most important factors that influence the Chinese dredging and land reclamation sector resulting in an overview of the opportunities and threats in this market. Besides, it should determine the competitive intensity and therefore attractiveness of the Chinese dredging and land reclamation market. The second sub-question aims at an elaboration on the most important macro factor influencing China's port governance. It should provide a better understanding of the main decisive stakeholders and difficulties within the Chinese dredging and land reclamation market. The third sub-question aims at tracing the most relevant legislation applicable towards foreign marine contractors. Finally, the last sub-question should provide more insights in how Dutch marine contractors can increase their chances in becoming successful in China as a foreign marine contractor.

1.6 Research design

As shortly mentioned before, the research will have an exploratory character. Exploratory research is a type of research conducted for a problem that has not been clearly defined or has a broad character. Exploratory studies tend towards loose structures with the objective of discovering future research tasks. Through exploration researchers develop concepts more clearly, establish priorities, develop operational definitions, and improve the final research design (Cooper, 2006). In terms of goals, exploration aims to generate new ideas and weave them together to form grounded theory, or theory that emerges directly from data (Stebbins, 2001). Also, exploratory studies are most typically done to satisfy the researchers curiosity and desire for better understanding, to test the feasibility of undertaking a more extensive study, and to develop the methods to be employed in any subsequent study (Babbie, 2010). Both quantitative and qualitative data may be gathered during exploration but although in most exploratory studies, qualitative data predominates. Exploratory researchers try to enhance the validity of their studies in various ways. For one, many of them discuss their emergent generalizations with the people they are investigating to determine if these ideas have a familiar ring, that in the eyes of these people, the generalizations seems plausible (Stebbins, 2001).

Exploratory studies are quite valuable in social science research. They are essential whenever a researcher is breaking new ground, and they almost always yield new insights into a topic for research. Although, the chief shortcoming of exploratory studies is that they seldom provide satisfactory answers to research questions, though they can hint at the answers and can suggest which research methods could provide definitive ones (Babbie, 2010). The reason exploratory studies are seldom definitive has to do with representativeness. Representativeness can be achieved in a number of ways and means that the individual, group, process, activity, or situation you study in your exploratory research may not be typical of the larger population that interests you. In other words, the perfect representative sample is one that exactly represents the population from which it is taken (Saunders, 2009). As can be imagined, sample representativeness in an exploratory study is usually less than perfect, because perfection on this matter is often an impossible goal (Stebbins, 2001). For this research, that is focusing on a business opportunities and better understanding of the dredging and land reclamation market in China it will be impossible to cover all objects in the given timeframe without endangering the validity and representativeness. However, one of the advantages of exploratory research is that it is easy can cope with change. Exploratory research is flexible and adaptable to change the research direction as a result of new data that appear and new insights that occur (Saunders, 2009). Therefore, exploratory research is an appropriate research method to cover this broad subject (Johnson, 2008).

1.7 Social and scientific relevance

The social relevance of this research is the contribution of a better understanding of the Chinese dredging and land reclamation market. This can be of supportive value when doing business in China. When the Economic and Commercial department of the Embassy has a better understanding of the Chinese situation they can be off better support for Dutch companies active in the dredging and land reclamation sector. As the Netherlands has extensive expertise - in building on weak subsoil and in small spaces, in addition to dredging, water barriers and flood protection, coastal and river design and port development - it is exactly in these areas that the Netherlands has a competitive advantage that should be utilized. The water construction sector in the Netherlands is a large foreign investor both in relative and absolute terms. Turnover from infrastructural water projects increased worldwide mainly driven by large infrastructural works in oil producing and exporting countries, such as Dubai and Qatar. The Netherlands is strong in the construction and maintenance of ports and waterways and the realization of large land reclamation projects. Examples are the palm and world island in Dubai and the Hong Kong airport. Also the Maasvlakte, the new part of the Port of Rotterdam is an example of a large water and harbor project. Altogether a good position to do business in China.

The scientific relevance of this research is the represented link between current theories regarding macro environmental factors, port governance and doing business in the Chinese dredging and land reclamation market. Until now, the literature does not provide sufficient information regarding the application of these theories to the Chinese dredging and land reclamation market. Therefore, theories regarding macro analysis, port governance and competitive advantage are applied to establish this link and create a clear picture of the Chinese dredging and land reclamation market.

1.8 Structure of the report

The structure of the report will contain seven chapters. Starting with an introduction in the first chapter the research is followed by a literature review and theoretical framework in chapter 2. In chapter 3 the research continuous with an elaboration about the research design and methodology used. Thereafter, chapter 4 provides the reader with the results. Chapter 5 will contain the conclusions and recommendations. Chapter 6 elaborates on the discussion.

H2 Literature review

The literature review examines recent research studies, company data, or industry reports that act as a basis for the proposed study as stated in the problem definition. It presents an exploration and description of the models and tools that will be applied in the research to get to a solution and answer to the research questions and finally to the problem definition. Literature reviews in exploratory research are carried out to demonstrate that little or no work has been done on the group, process, or activity under consideration and that an open-ended approach to data collection is, therefore, wholly justified (Stebbins, 2001).

At first, the three objectives and research questions as stated in the first chapter will provide as guidance to this literature review. The first objective is to study the Chinese dredging and land reclamation market from an macro level perspective. This macro analysis aims at external and uncontrollable factors affecting the Chinese dredging and land reclamation market offering new opportunities and threats. The second objective will narrow down on those factors that significantly influence China's port governance. Finally, the third objective, will elaborate on the best practices for Dutch contractors regarding the approach of the Chinese dredging and land reclamation market.

2.1 PESTEL Framework

The macro level analysis can be seen as an audit of environmental influences. The aim is to identify which macro environmental influences are likely to affect further development of the Chinese dredging and land reclamation sector. It is useful to relate such influences to new trends and globalization of industries. With increasing globalization – the international integration of goods, technology, labor, and capital – the implementation of global strategies that link and coordinate organizations international activities on a worldwide basis becomes more important. Global strategies have to cope with increasing dynamic and complex environmental conditions (Johnson, 2008). When these environmental conditions change, organizations should anticipate and if possible influence environment in favor of the organization.

Several authors ((Ball, 2006), (Daft, 2006), (Johnson, 2008)) make a distinction in the definition of environment and its influence on the organization. Ball (2006) makes the distinction in domestic, foreign and international environments. International business differs from its domestic counterpart in that it involves three environments – domestic, foreign, and International – instead of one. The term environment means all the forces that influence the operations of an organization. Although these kinds of forces are the same in the domestic and foreign environments, their values often differ, and changes in the values of foreign forces are at times more difficult to assess. The international environment is the interaction between the domestic and foreign environmental forces or between sets of foreign environmental forces. The forces themselves can be classified as external or internal. External forces can be seen as forces uncontrollable by management. Internal forces are forces of which management does have control and were forces are used to adapt to changes in the uncontrollable forces (Ball, 2006).

From the perspective of Daft (2006) the environment as discussed above can be divided in a general environment, a task environment and an internal environment. The general environment is the outer layer of the external environment that affects the organization indirectly. It includes technological, sociocultural, economic, legal/political and international factors. As with the uncontrollable forces stated by Ball (2006) these factors are difficult to assess. The task environment is closer to the organization and includes the layer of the external environment that directly influences the organizations operations and performance. It includes sectors like customers, competitors, suppliers and labor markets that conduct day-to-day operations. The organization also has an internal environment, which includes these elements within the organization's boundaries. The internal environment is composed of current employees, management and corporate culture that defines employee behavior in the internal environment and how well the organization will adapt to the external environment (Daft, 2006).

The macro-environment is the highest-level layer. As discussed above it consists of broad environmental factors that impact to a greater or lesser extent on almost all organizations. It is important how these factors are changing now and how they are likely to change in the future, drawing out implications for the organization. Many of these factors are linked together. Here, the PESTEL framework can be used to identify how future trends in the political, economic, social, technological, environmental and legal environments might

impinge on organizations. This PESTEL analysis provides the broad 'data' from which to identify key drivers of change. These key drivers can be used to construct scenarios of possible futures. Scenarios consider how strategies might need to change depending on the different ways in which the business environment might change (Johnson, 2008). The PESTEL framework provides a comprehensive list of influences on the possible success or failure of particular strategies. PESTEL stands for Political, Economic, Social, Technological, Environmental and Legal. To put it shortly, the framework helps in understanding the key environmental drivers and changes in an industry structure. In the upcoming paragraph each of these factors will shortly be explained.

2.1.1. Political factors

Political environments vary widely between countries and can alter rapidly. Governments can create significant opportunities or threats for organizations. It is important, however, to determine the level of political risk before entering a country (Johnson, 2008). In a number of ways, the political climate of the country in which a business operates is as important as the country's topography, its natural resources, and its meteorological climate etc. The political arena of a country has a huge influence upon issues like the regulation of businesses, and the spending power of consumers and other businesses. The firm as such interacts with organizations setting or influencing the regulations under which companies must operate. These could include governments, political parties, special interest groups, regulatory bodies and international institutions (De Wit, 2004). Depending on their influence and importance these stakeholders will be discussed.

Many of the political forces with which business must cope have ideological sources, but there are a large number of other sources. These sources include nationalism, terrorism, traditional hostiles, unstable governments, international organizations, and government-owned business (Ball, 2006). In assessing the political environment these factors contribute to the degree of intervention and influence of the political policies in a country. A good example is the degree of intervention in the economy of a country. Political decisions can impact on many vital areas for business such as the education of the workforce, the health of the nation and the quality of the infrastructure of the economy such as road and rail systems.

Based on the theory of Cavusgil (2002), the research argues that because China is an emerging market, government influence is a heavily weighted factor to be considered before entering the market. Interviews with employees of the Economic and Commercial Department and several other departments of the Dutch Embassy have confirmed this assumption by stating that the influence of politics is omnipresent in the Chinese business market, in particular the construction market. In other words, although other factors are to be considered as well, the multidimensional influence of politics surpasses the other PESTEL factors as distinguished by Ball (2006). As such, the literature review will elaborate on this factor on a more in-depth basis later on.

2.1.2. Economic factors

Economic forces are among the most significant uncontrollable forces for managers. To keep ahead of the latest developments and also to plan for the future, firms for many years have been assessing and forecasting economic conditions at the national and international levels. When entering overseas markets, economic analysis becomes more complex because now a firm must operate in two new environments: foreign and international. In the foreign environment, there are many economies instead of one, and they are highly divergent (Ball, 2006).

The purpose of economic analyses is first to appraise the overall outlook of the economy and then to assess the impact of economic changes on the firm. Key indicators in deciding entry are levels of GDP and disposable income like the PPP index that help in estimating the potential size of the market. Other important indicators i.e. are distribution of income, private consumption expenditures, personal ownership of goods, private investment, unit labor costs, inflation and interests rates (Ball, 2006) Fast-growth economies obviously provide opportunities, and in developing economies such as China growth is translating into an even faster creation of a high-consumption middle class. However, companies must also be aware of the stability of a country's currency, which may affect its income stream. There can be considerable currency risk (Johnson, 2008). Organizations are influenced by this general economic state of affairs, with which the firm interacts, are among

others, tax authorities, central banks, employers' federations, stock exchanges and unions may be of importance (De Wit, 2004).

This second factor from the PESTEL framework will be discussed and mentioned on a less prominent basis in comparison to the political factor. To get a clear guidance and limit the broad scope of this research the pith of matter will aim at the political factor. As all PESTEL factors are interrelated and intertwined the economic factor will be mentioned sporadic within the data chapter and results. To give an introduction and idea of China's economic transition the report refers to paragraph 1.2.1.

2.1.3. Socio-cultural factors

According to (Daft, 2006), the socio-cultural factor represents the demographic characteristics as well as the norms, customs and values of the general population. Important sociocultural characteristics are demographic distribution and population density, age, and education levels. Today's demographic profiles are the foundation of tomorrow's workforce and consumers. Social factors will clearly be important, for example the availability of a well-trained workforce or the size of demographic market segments – old or young – relevant to the strategy. Cultural variations need to be considered, for instance in defining tastes in the marketplace (Johnson, 2008). Cultural trends can present both threats and opportunities for a wide variety of firms. Individuals or organizations that have a significant impact on societal values, norms, beliefs and behaviors may interact with the firm. These could include the media, community groups, charities, religious organizations and opinion leaders (De Wit, 2004).

Again, as with the economic factor, the socio-cultural factor will be discussed and mentioned on a more limited basis. The six PESTEL factors are all interrelated but due to the limited time scope not all factors can be discussed properly. Besides, an in-depth analysis of each factor does not contribute to a clear guidance within this report as the focus will lie on China's port governance in the dredging and land reclamation market.

2.1.4. Technological factors

One dimension of environmental analysis is technological trends of technological events occurring outside the market of industry that have the potential to impact strategies. They can represent opportunities to those in a position to capitalize (Aaker, 1995). According to Daft (2006), the technological dimension includes the scientific and technological advancements in a specific industry as well as in society at large. In recent years, this dimension has created massive and far-reaching changes for organizations in all industries. Emerging generic technologies seem set to make a revolutionary impact on the economy and society. However, success in developing such technologies depends upon advances in science. Confronted with increasing global economic competition, policy-makers and scientists (Trott, 2008).

Technology will be shaped in the future, as in the past, by the needs of corporations and government agencies. These have a continued pressing need to anticipate and cope with the direction and rate of technological change. The future of technological forecasting will also depend on the views of the public and their elected representatives about technological progress, economic competition, and the government's role in technological development (Trott, 2008). New technologies create new products and new processes. MP3 players, computer games, online gambling and high definition TVs are all new markets created by technological advances. Online shopping, bar coding and computer aided design are all improvements to the way we do business as a result of better technology. Technology can reduce costs, improve quality and lead to innovation. These developments can benefit consumers as well as the organizations providing the products. Organizations that influence the pace and direction of technological development and the creation of new knowledge are among other, universities, research institutes, patent offices, government agencies and standardization bodies may be important to deal with (De Wit, 2004).

Just like the economic and socio-cultural factors the technological factor will be discussed sideways contributing to a clear guidance of the research.

2.1.5 Environmental factors

Although environmental factors are not always considered as important, their geographical context has a profound impact on the way people organize their activities and is also one of the factors that influence humanity (Ball, 2006). Environmental factors embrace natural resources with a consideration of the basics, location, topography, and climate. Historically, nations have paid relatively little attention to the contamination and destruction of the world's natural resources. The demands placed upon the environment by people and commerce should be met without reducing the capacity of the environment to provide for future generations. Natural resources are not inexhaustible. Water, soil, and air can become toxic and their use needs to be informed by awareness of that danger. Changes in natural resources can impact on many industries and organizations. With major changes, i.e. climate deterioration occurring due to global warming, and with greater environmental awareness this external factor is becoming a significant issue for firms to consider. Determine the competitive advantage of a region or country due to their natural resources.

Despite dredging and land reclamation activities are intervening with the environment the report will not elaborate on the implications and influence of these activities on the environment. Again, if relevant, the environmental factor will be discussed sideways.

2.1.6. Legal factors

It is important for participants in international business to understand the enormous breadth and depth of laws in various jurisdictions worldwide. When examining counties around the world, it is important to determine if the country is governed by the rule of law. It is desirable that a country bases its functions on the rule of law, instead of rule by political dictatorship or rule by a powerful elite. Countries vary widely in their legal regime, determining the extent to which businesses can enforce contracts, protect intellectual property or avoid corruption. When a firm is operating in a foreign environment it is important that it is protected by the legal system. A protective legal system should be governed by rule of law, is disputed by resolution in international contracts, acknowledges intellectual property and acknowledged standardizing world laws. Specific national legal forces like tax legislation (discouraging consumption of harmful products like tobacco) and antirust laws that encounters inappropriate large concentrations of economic power also influences business (Ball, 2006).

This last factor of the PESTEL framework will be connected to the political factor and as such will be discussed more properly in comparison to the economic, social-cultural, technological and environmental factors. From the exploratory conversations and interviews with employees of the Economic and Commercial Department and several other departments of the Dutch Embassy the suspicion rises that China's communistic party governs the legal system instead of by rule of law. As the construction market is a major employer in China the government tries to protect this market from foreign competition by several trade barriers and legal legislation (Li, 2003). After discussing China's political government and its role in the transition of the infrastructure market a more in-depth analysis will be held on China's legal system.

2.1.7 Selection relevant PESTEL factors: political and legal factors

The role of a macro environmental analysis, as with the PESTEL factors, is to detect, monitor, and analyze those current and potential trends and events that shape the market on which companies have to anticipate. Nevertheless, the factors from the PESTEL framework influence the development of the Chinese dredging and land reclamation market in varying degree. Therefore, to get a clear guiding framework as well as restricted by the timeframe of this bachelor assignment, the research will elaborate on a limited number of factors. As such, the decision was made to focus mainly on the political and legal factor within the PESTEL framework. Several interviews with employees of the Economic and Commercial Department of the Dutch Embassy have risen the suspicion that the influence of politics and legal system is omnipresent in the Chinese business market, in particular the construction market. In other words, although other factors are to be considered as well, the multidimensional influence of politics and related legal implications surpasses the other PESTEL factors as distinguished by Ball et al. (2006). Therefore, this report will mainly elaborate on theoretical concepts regarding political influence in China and will incorporate the other factors where necessary.

2.2 China's political government

The political climate of a country reflects political ideologies of governments, political parties and people. These can be for instance communistic, socialistic, capitalistic, conservative etc. (Ball et al., 2006). The political ideology can affect its environment, and thus it could assume that it also affects organizations operating in that environment. For instance, China is a communistic country. Communism, as introduced by Karl Marx, strives after the ideal of a classless society (Ball, 2006). Historically seen, the government of a communistic country would want to own all major production factors. Government control on factories and farms was no exception in communistic China. And still, China controls much of its businesses. For instance, there is often unfair competition between state-owned corporations and privatized firms in markets. This can be a result of unequal subsidy provision (Ball et al, 2006). This might affect the competitive advantage of privatized firms and the feasibility of success in the market. But there is more. Despite a positive outlook and high expectations from the booming economy (see also paragraph 1.2.1) China is facing a myriad of challenges and problems as it moves into the twenty-first century. China's ability to successfully solve these problems and manage these challenges will directly influence its internal stability, the continuations of its reform and opening up policies and the security of China as an emerging country.

According to Arnold & Quelch (1998) an emerging economy can be defined as a country that satisfies two criteria: a rapid pace of economic development, and government policies favouring economic liberalization and the adaption of a free-market system. Definitions from other authors describe emerging markets as countries that are restructuring their economies along market-oriented lines, moving from a closed to an open economy and offering opportunities in trade, technology transfers, and foreign direct investment (Liu, 2005). Besides, within an emerging economy decision-making is centralised and governmental influence and interventions exceed regulatory environment (Cavusil, 2002). As such, since the beginning of economic reforms the Chinese government was directly involved in corporate governance through its ownership and control (Liu, 2005). The government largely protects revenues and profits of these organizations, which operate in highly regulated and concentrated industries pursuing national strategic interests and domination on behalf of China. Protection also has a broader social role – for instance, providing employment or extending products and services to customers in China's underdeveloped regions (McKinsey, 2009).

Moreover, governmental intervention can underpin and ground a steady growth pace for the long term. The comparison between the "transitional" countries Russia and China (moving from communism to capitalism) provides the extreme case in point: Russia – massive liberalisation and privatization (shock therapy), catastrophic economic performance; China – gradual liberalization and privatization, excellent economic performance (by standard measures). Within each country, one finds that the more radical liberalizers performed worse economically in the 1990s than those that moved more gradually (Wade, 2004). From the same perspective, almost al countries that have caught up with the club of developed industrial countries have tended to follow the prescription of Friedrich List, the German catch-up theorist writing in the 1840s: "In order to allow freedom of trade to operate naturally, the less advanced nation (read: China) must first raised by artificial measures to that stage of cultivation to which the developed nations has been artificially elevated". Within China these policies and measures are centrally governed by a mixed economic and political order under an administratively bureaucratic regime at the national level. It is clear that China, like many other authoritarian regimes, struggles with the tension between the need to foster economic development by empowerment and the regime's imperative to control the economy politically (Luo, 2010). Based on the theory regarding emerging economies (Cavusil, 2002) and the intertwisted relation between the government and the Chinese economy (Luo, 2010) the research cannot neglect the role and the influence of the Chinese government regarding the Chinese land and reclamation market. Therefore, the literature review will proceed with an elaboration regarding the political influence on the Chinese dredging and land reclamation market after discussing the organization and planning process the Chinese government.

2.2.1 Organizational structure of the Chinese government

According to Liu (2005), within the organizational structure of the Chinese government there are a number of players. The key ones, which are involved in the infrastructure policy making and planning process at the central level, are: the Central Party Committee (CPC), National People's Congress (NPC), the State Council, Chinese People's Political Consultative Conference (CPPCC), the macro-economic management agencies

including the National Development and Reform Commission (NDRC, formerly National Planning Commission), Ministry of Finance (MOF), People's Bank of China (PBC, the central bank), and the sector/line ministries including Ministry of Communications, Ministry of Railways, Ministry of Construction, Ministry of Information Industry, Ministry of Land Resources, State Environment Protection Administration and Civil Aviation Administration (Liu, 2005). Take a look at Appendix A for a description of involved entities.

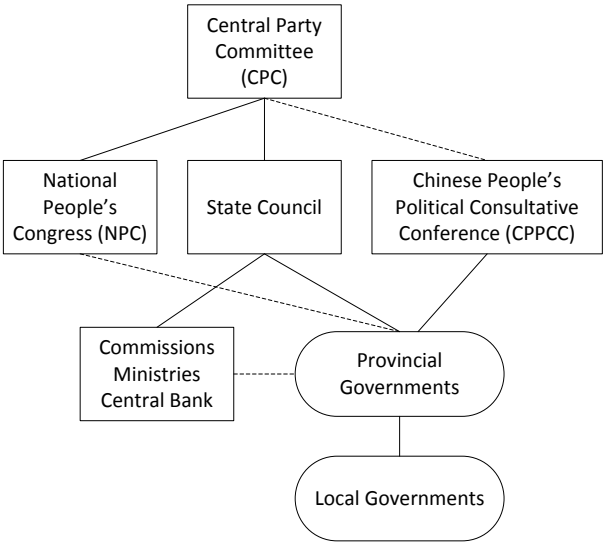

Figure 2: Organizational Structure of the Central Government (Cai, 2003) in (Liu, 2005)

The organizational structure of the Chinese central government is shown in figure 2. The CPC at the top of the structure is the most important entity within China's policymaking process. The highest level policy making body is the standing committee of the CPC Political Bureau. The NPC, the State Council and the CPPCC carry out their respective functions (i.e. legislature, administration, and policy consultation) under the leadership of the CPC (Liu, 2005). In fact, the top positions of NPC, State Council and CPPCC have almost always been held by a Political Bureau standing committee member. Through this arrangement, the CPC is actually in charge of the government (Liu, 2005). The CPC plays a leading role in setting the national policy agenda, making national policy decisions, and even guiding the law making process. However, its role does not end there. It also closely monitors and guides policy implementation (Liu, 2005). As such, the attention and effort of the party leaders given to economic affairs is intensive. This could be illustrated by the intensive role the CPC has played in leading the implementation strategy of the western regional development that involves massive investment in infrastructure (i.e. 10th Five-year plan with the 'Go West' policy as mentioned in the introduction). It is not uncommon for a ruling political party to pay constant attention and give direct guidance to economic affairs (Liu, 2005). After all, successful performance in supporting economic development is a safe way for the one-party ruling system to survive.

2.2.2 The planning process at the central level

The Chinese institutional setup for infrastructure planning and policy coordination at the central level is showed at figure 3. To a great extent, it is similar to what could be seen in many other countries where government planning still has a significant role in economic affairs (Liu, 2005). However, there are noted differences. The NDRC, as the main planning machinery, is not only the planning agency for national economic and social development but its role also extends beyond the formulation of economic development strategies, five-year plans and annual plans. It organizes and coordinates the implementation of these plans (Liu, 2005). This leadership role in implementation is needed, because the actual implementation functions is linked with a number of line ministries and lower level governments (Cullinane, 2007). As such, because of the extended size of China, its institutions pose high risks that things could easily go out of control somewhere. In addition to its planning and implementation role, NDRC is part of the top policy making mechanism.

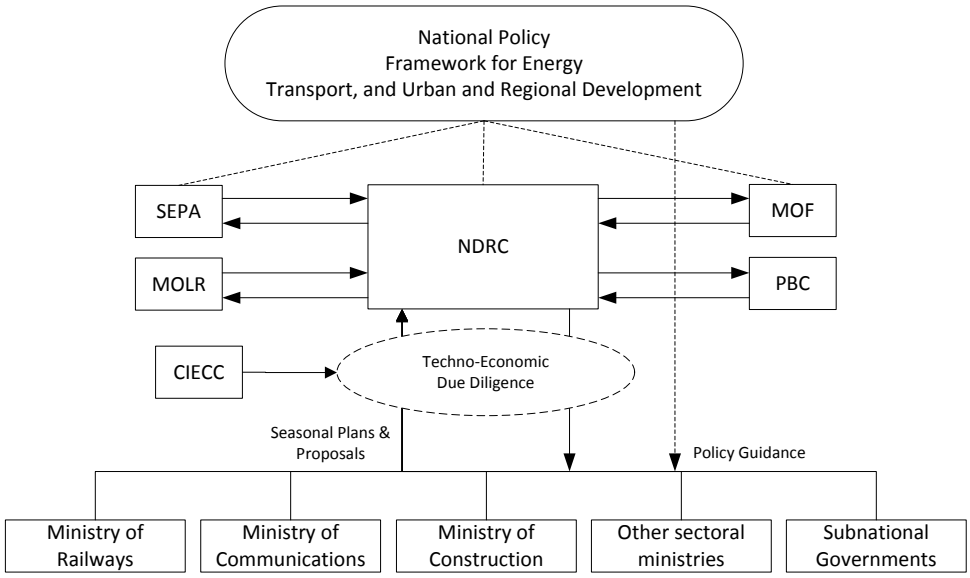

Figure 3: Institutional setup for planning at the central level (Liu, 2005)

As mentioned before, infrastructure development in China is guided by various government plans and increasingly by the market. The planning system consists of socioeconomic planning and sectorial planning at all levels of government. The timeframe for socioeconomic and sectorial plans include long-term, medium-term (i.e. five-year plans) and annual terms. The urban and infrastructural master plan usually coves a time span of 20 years. Regional planning is not mandatory. It is carried out on an ad hoc basis, and is more based on a forward-looking regional study (Liu, 2005).

2.2.3 The planning process at the local level

The institutional setup at the provincial and local level is similar to the central setup in many aspects. At the provincial level, there are party committee, people's congress, planning commission, and various departments such as finance, urban construction, communications, and environment protection. There are also differences. For example, there is no railway department because the national railway branches under the Ministry of Railways are not organized on the basis of provincial jurisdiction. The same applies for the (sea)port sector as the national port network branches under the Ministry of Communications[1].

The local level includes municipalities and rural counties. The large municipalities usually comprise a central city and a few or a number of suburban counties. Again there are party committee, people's congress, planning commission, finance bureau, and other sector bureaus in each municipality. Many large municipalities have a construction commission that leads and coordinates the work of several bureaus including urban planning and design, municipality engineering administration, public transport and public utilities. A few major municipalities such as Beijing created a metropolitan transport commission to manage transport. The small municipalities usually have a construction bureau that takes care of urban planning and design, municipal infrastructure, and public utilities (Liu, 2005).

2.2.4 Government influence and transformation in the Chinese infrastructure industry

With the reform and opening more than three decades ago, the infrastructure industry in China have developed quickly and have been playing a very important role in the development of the domestic economy.

[1] Footnote: *Despite the English name of its predecessor, the Ministry of Communications (MOC), the Ministry is not responsible for non-transport communications such as telecommunications, broadcasting, radio frequency and spectrum licenses or broadband communications (Internet). This ministry is in fact "the ministry of transportation" and its Chinese name "Jiāotōng Bù" is also literally "the ministry of transportation". Its English name is inherited from previous Chinese governments.*

The role of infrastructure for economic development has been well documented in literature (Aschauer, 1989) (Munnell, 1990) (WorldBank, 1994) (Estache, 2006) (Sahoo, 2009). Infrastructure development, both economic and social, is one of the major determinants of economic growth, particularly in developing countries. Direct investment on infrastructure creates a.) transportation facilities and stimulates economic activities; b.) reduces transaction and trade costs improving competitiveness and c.) provides employment opportunities to the poor. In contrast, the lack of infrastructure creates bottlenecks for sustainable growth and poverty reduction (Sahoo, 2009). As such, China has undergone a period of remarkable infrastructural development enabling impressive growth rates. Since 1998 China has invested heavily in economic infrastructure. Annual capital expenditures for transportation (including harbours and coastal ports), electricity, piped gas, telecommunications, urban water supply and sanitation increased steadily from US$39 billion in 1994, to US$88 billion in 1998, and to US$123 billion (about 8.7% of GDP) in 2003. This is in sharp contrast to other East Asian countries where infrastructure investment dropped dramatically due to the Asian Financial crisis. However, China needs to maintain its growth momentum in a sustainable manner to improve the overall standard of living of and reduce regional inequality. China cannot ignore some of the problems that have emerged as a result of the rapid growth. These include marked economic imbalances, environmental issues, and widening social disparities that need to be addressed to sustain growth over the longer term. The issue of economic and social inequality is critical to the economic rebalancing agenda, which in turn is necessary to sustainable long-term growth (Kuroda, 2011). But the control and influence of the Chinese government makes it difficult to overcome the obstacles of China's infrastructure development. Investments in public utilities and infrastructure should go hand in hand with accelerated market-oriented reforms to strengthen the efficiency and competitiveness of China's infrastructure development (Fulin, 2008).

Other international experience has shown that well-functioning public utilities and infrastructure enhance productivity, lower production costs, and improve quality of life. Since the 1980s public utilities and infrastructure worldwide have undergone rapid development, with vertically integrated and state-owned public utilities being privatized and industries such as telecommunications, civil aviation, harbours, railways, power generation, and water utilities opened up to the global market. Since these sectors involve mostly technology- and capital-intensive industries, multinational corporations play an important role in their development, and international competition is even more intense than in other industries (Fulin, 2008). In this perspective, the control by the Chinese government over the right to access the market is the most important factor affecting China's economic growth (Qiren, 2001). The Chinese infrastructure industry is not completely open to competition which results in not only low efficiency that in turn affect other related industries, but also is hindering the stimulation of investments from non-governmental sectors. Thus, investments in public utilities and infrastructure should work with accelerated market-oriented reforms to strengthen the efficiency and competitiveness of China's infrastructure development (Fulin, 2008).

The real issue, however, is the political struggle within the elite over different ideological position over the appropriate role of the government in guiding economic development (Straussman, 2001). Within the on-going process of market-oriented reform the central government maintains a strong role in infrastructural sector planning, financing and policy coordinating but provincial and local governments are fast learning how to finance and manage infrastructure (Liu, 2005). As such the reforms have displayed a cyclical pattern of centralization and decentralization of administrative functions that reflect the efforts of the Chinese leadership to find an 'optimal' balance between central control and subnational limited autonomy (Straussman, 2001). In addition, the most distinguishable change is that governments at different levels no longer assign infrastructural work to construction enterprises. They have withdrawn from the operations of these firms. The intervention of government in the infrastructural market shifted from direct ownership of project to indirect control through financial leverage. Furthermore, the national government has conditionally opened its construction market to foreign investment and foreign contractors. However, unlike Western countries, Chinese government intervention in the infrastructure market is still pervasive and influential but changing for the better (Chen, 1997). According to Fulin (2008), government policies make little steps towards a more open infrastructure market as decentralization increases and new reforms focus on attracting private capital, increasing transparent funding, stimulating competition, separating state and enterprise and regulating power.

From this perspective, the development of China's economic reform is to let state-owned enterprises compete in an environment in which market forces become dominant and government interventions are reducing. In order to trace this transformation it is necessary to understand the nature of competition in the Chinese

infrastructure industry as in a free market and the factors involved in creating a market economy from a planned economy. Porter's work (1980, 1985, 1990) offers useful insights into industry competition. According to Porter, the basic unit of analysis for understanding competition is industry. A firm's competitive strategy must grow out of a sophisticated understanding of the structure of the industry and how it is changing. In any industry, whether it is domestic or international, the nature of competition is embodied in five competitive forces. These forces determine industry profitability as they shape the price firms can charge, the costs they have to bear, and the investment required competing in the industry. The strength of each competitive force, as shown below, is a function of industry structure, or the underlying economic and technical characteristics of an industry:

- The bargaining power of buyers: a function of such things as the number of buyers, and the degree to which a firm's sales are dependent upon any one buyer.
- The threat of new entrants: these can limit the overall profit potential in the industry.
- The threat of substitute products or services: the presence of close substitute products limits the price that competitors can charge without inducing substitution and eroding industry volume.
- The bargaining power of suppliers: powerful suppliers are able to increase their profits by bargaining.
- The rivalry among the existing competitors: the higher costs required by competition or by the need to pass on profits to customers in the form of low prices.

It is apparent that Porter's 'driving forces' model well describes the market side of industry structure analysis (Watson, 1992). However, the threat of substitute products or services in the model is not as relevant in the infrastructure industry as it is in the manufacturing industry. This is due to the non-substitution nature of most products or services provided by infrastructural enterprises. IMF (1993) research into the changes of China's economic system highlights several factors, which indicate transition in the economy. According to the IMF, the transformation of an economic system from a centrally planned economy to an economy in which resources are allocated primarily through market mechanisms can be examined with regard to the following elements:

- If the price mechanisms operate freely; that is, prices are set by the independent interaction of producers and consumers in most or all sectors of the economy.
- If all sectors of the economy are open to international trade; that is, minimal tariffs and non-tariff barriers or other forms of government trade control apply.
- If competition is strong in all industry sectors of the domestic market, referring to a lack of regulatory or legal barriers to the entry or exit of firms.
- If the state plays a minimal role in the domestic economy, whereby the role of government is mainly limited to providing public goods and collecting taxes necessary to finance these activities.
- If an institutional framework supporting market activities is well developed, a framework which includes an effective rule of law and an independent judiciary, well developed regulatory standards and a responsive and transparent bureaucracy.

These criteria reflect both the relative importance of market forces and government intervention in an economy. However, applying the criteria to the Chinese infrastructure industry is problematic in that the international trade issue is not nearly as relevant. Infrastructure is a special industry and protected by the Chinese government. The products of the industry are immobile and are usually tied to the final market. As such, international trade control affects little of the industry. This trend of protectionism is also confirmed by the IADC (2010), which is tagging the Chinese dredging and land reclamation industry as a 'closed' industry for foreign marine contractors.

Lan (1999), based on the two models from Porter and the IMF, developed a framework for analysing the transformation of the Chinese infrastructure industry. Lan drops the irrelevant elements as discussed above and combines the models into a new framework (figure 4). Within this framework there are several considerations. Firstly, all indicators of economic transformation, except those of government intervention, should be discussed with the key players in the industry as they are interwoven with the four driving forces. For example, increasing competition can be observed among contractors, suppliers and new entrants. Institutional frameworks also affect the behaviour of contractors and clients. Secondly, government intervention covers the several roles a government can play, both directly and indirectly, affecting the operations of the driving forces, such as client, financer and regulator. Thirdly, rural construction firms are treated as entrants not suppliers.

Although many rural construction teams serve as labour suppliers for construction enterprises, many of these also act as independent contractors in construction projects, particularly in small-scale projects. Foreign construction companies are also treated as new entrants, though their entry into the construction market subjects them to government intervention. Finally, building material manufacturers and consultants are placed into the category of suppliers. The reason that only building material suppliers and various consultants are choses as suppliers is that they provide materials and services, which are continuously consumed in construction activities. By contrast, other suppliers such as construction equipment manufacturers are excluded in this analysis, as their relationship with contractors is only occasional and is comparatively weak. This framework, as provided by Lan (1999), will be applied to the analysis of the Chinese infrastructure industry, and to be more specific, the Chinese dredging and land reclamation market as such. The analysis can provide more insight regarding the behaviour of key stakeholders such as the government, contractors, suppliers, clients and new entrants. Because, as the research will focus on those dredging and land reclamations activities that are related to the development of China's coastal ports the literature review will continue with an elaboration regarding the historical context and concurrent reform of its port industry.

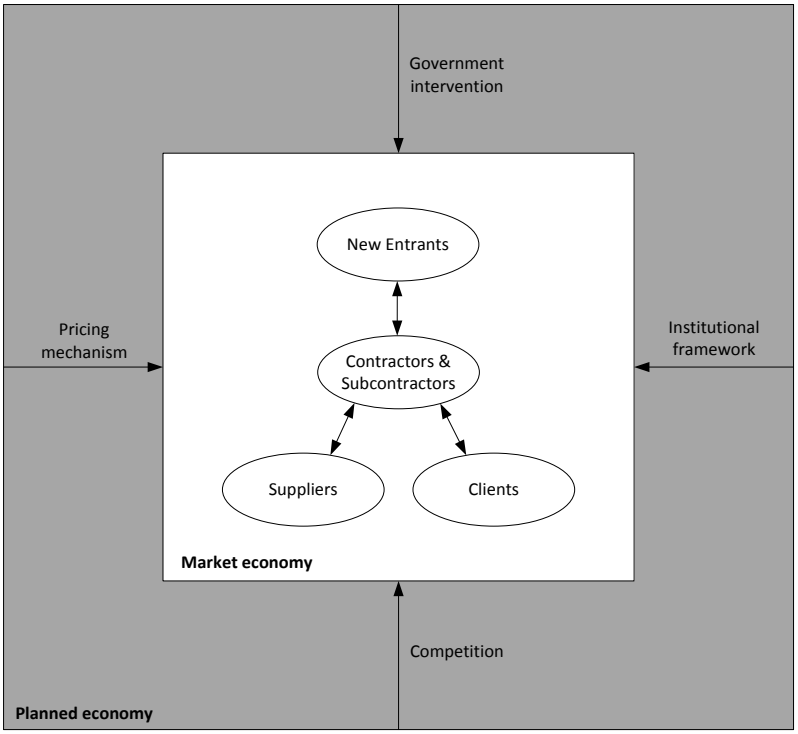

Figure 4: Framework for analysing the transformation of the Chinese construction industry (Lan, 1999)

2.3 Port Governance: The planning process at the port level

Following the planning process at the central, provincial and local level as was discussed successively in paragraphs 2.2.2 and 2.2.3 supplemented with the transformation of the Chinese construction market in paragraph 2.2.4 this paragraph will elaborate further on China's planning process at the port level. It will discuss how the role of planning and policy coordination in China, also named port governance, has evolved to meet the country's enormous need for port infrastructure. Some of the historical developments will be discussed to get a better understanding of China's port governance and port planning at its current state. As such, China's port industry had to develop rapidly in order to keep pace with an ever-expanding economy and cargo flows (Cullinane, 2007). The evolution of port governance in China is consistent with and can be explained by, the wider macroeconomic development of the nation. In line with the evolution of the whole economic system, China's port governance system has also evolved from one characterised by a high degree of centralisation to one of decentralization (Cullinane, 2007). Local governments have been given much more authority in administrative, economic and budgetary matters. In each stage of the reform to date, government

intervention gradually diminished, while the state owned enterprises (SOEs) gained greater autonomy. Figure 5 shows the evolution of port governance since 1979.

Figure 5: Timeline of China's Port Governance development (Cullinane, 2007)

2.3.1 Period 1979-1984

During this period, China's port sector was extremely vertically integrated and centrally controlled. In its role as the representative of the Chinese central government, the Ministry of Communications was the owner of the ports and exerted total control over all port activities and decisions making, including the formulation of strategy and supporting policies, port planning, important infrastructure investment decisions and managing port operations. Local government at provincial or municipal level had no control over port authorities and all profits and losses from port operations were for the central government. The advantage of this system was that the Chinese government could develop an overall national strategic plan across the whole of the country's port network and, given the limited available capital at this time, could concentrate on building several large ports. A disadvantage of this system is the lack of motivation or interest to improve operating efficiency at the side of port management and local government (Cullinane, 2007). In other words, since they would not benefit or suffer from the economic performance of ports under their control, neither operational management nor local government was motivated to further improve the quality and efficiency of port production. Another serious drawback of this system was that insufficient funds were allocated for investment in most of the ports. Because of the limited amount of capital available from central government, only a few ports could invest sufficiently to secure further growth and development. This resulted in serious cargo bottlenecks (Transport, 2005). See Appendix B for a schematic overview.

2.3.2 Period 1984-2004

The inefficiency of port operations and limitations of capital investments available for port development resulted in a first step of new port governance. A new system was introduced in 1984 at the port of Tianjin. The port was now managed by the central government and the Tianjin municipal government. By 1987, almost all ports in China were placed under joined control by central and local governments. Till 2004, local government obviously gained increasing control over the port sector during this time, as decisions making power and authority transformed from a highly centralized system to one of greater decentralisation. During this period, investment came not only from the central government but was also sourced from local government, foreign investment and commercial bank loans. One of the reasons behind the introduction and subsequent encouragement of foreign investment in China's port industry was the Chinese government's realisation that with the development of global transportation and the implementation of new transportation patterns its ports would face increasingly strong competition from counterparts in neighbouring countries. To increase the competitive edge of China's port sector, the most efficient approach was to introduce, or at least allow and encourage, the entrance of sophisticated management from foreign investors (Wang T. C., 2004). During this period, the joint venture was the only way that foreign investors could enter the Chinese port market. Conspicuously, the upper limit on stakes held by foreign investors in any single Chinese port was set at 49%. This limitation allowed the Chinese government to keep control over the final say in port planning and operation, accrue the largest share of the benefits from port operations and limit the influence of foreign investors. Because of the existence of the 49% ceiling, foreign investors in China's port sector clearly did not have the right to control or decide upon important issues (Li, 2003). To some extent, this decreased the enthusiasm of foreign investors. Nevertheless, by the end of this period the number of external investments in mainland China's port sector was quite considerable, although limited solely to container ports. Foreign direct

investment in the port sector came especially from ethnic Chinese sources (Wang T. C., 2004). See Appendix B for a schematic overview.

2.3.3 Period 2004-present

Because of the 49% stake limitation, foreign investment decreased. Besides, the local port authorities conducted most strategic port activities. These entities had two roles to play. On the one hand they acted as a government body setting regulations and on the other hand the local port authority was also a state owned enterprise that had to act in line with their own government regulations. This structure disturbed a good market mechanism. To overcome this problem the central government started with the separation of many autonomous functions. Finally in 2004, the 'Port Law' and its complementing 'Rules on Port Operation and Management' came into effect (Cullinane, 2007). These regulations replaced the original port authority with a Port Administration Bureau and a port business enterprise. The first can be either an independent provincial or municipal Port Administration Bureau or it can be a provincial or municipal Transportation Administration Department. The latter should be a simple business entity, following and engaging in the open market, as well as in competition and cooperation with other business entities. According to the Port Law, the Chinese central government will no longer retain any ownership of ports (Li, 2003). The previously public ports owned or partly owned by the central government will be transferred to local provincial or municipal government. Under the framework of the Port Law, the central government and the relevant transportation department at the provincial level are responsible for strategic planning and formulating relevant policies and regulations for the development of the port network system at the level of the whole country and the province, respectively. The Port Law also implicitly defines the relationship between the strategic planning undertaken by central and local government. That is, strategic planning undertaken by local governments needs to be approved by central government. To a great extent, this guarantees that the strategic planning conducted by local government will not conflict with the overall strategic plan that is formulated by central government for the nation as a whole (Cullinane, 2007). Looking at the regulations concerning port investment as described in the Port Law, investors from both China and other countries are now allowed to enter the port market with no limitations on stakes. But still, there are some unofficial barriers and measures that make it difficult to take a majority stake in port operations and assets (Li, 2003). Figure 6 shows the Chinese port governance structure at its current state.

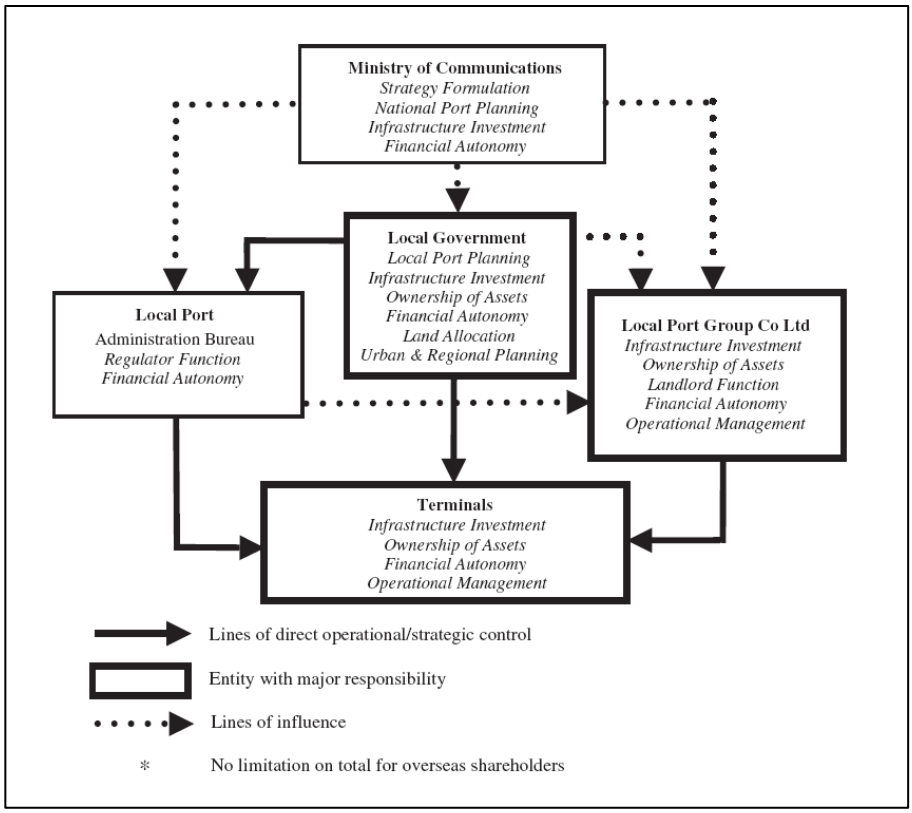

Figure 6: China's Port Governance Model (current) (Cullinane, 2007)

2.4 Drivers behind the Chinese dredging and land reclamation market

This paragraph will shortly elaborate on the essential drivers behind the development of China's port industry. It will shortly summarize the main drivers behind China's dredging and land reclamation market. Dredging is vital to social and economic development, in particular to the construction and maintenance of much of the infrastructure upon which economic prosperity and social and environmental well-being depends. Dredging can be characterised as a capital-intensive industry requiring in-depth contracting knowledge. Its impact for an economy is therefore far larger than its effect on direct employment or industry turnover (IADC, 2010). The world population, as for example China, depends heavily on dredging solutions for global world trade, urban development, energy supplies, environmental and coastal defence, and leisure/tourism. As such the report distinguishes five drivers that influence the Chinese dredging and land reclamation market:

- World trade;
- Urban development;
- Energy supplies;
- Environmental and coastal defense;
- Leisure and tourism.

In chapter 4, the five drivers will be discussed for the Chinese situation.

2.5 China's legal framework

In order to guide and relate the activities of the infrastructure market, the central, provincial and municipal governments have enacted the *Construction Law*, *Contract Law, Port Law* and *Tendering Law*, as well as a number of detailed regulations and procedures relating to the qualifications of contractors, soil and site investigators and design institutes, design and construction codes and standards, competitive tendering etc (You-Jie, 2001). China did not have any unified construction law until 1996. The Construction Law was enacted on 1 November 1997 and put into effect on 1 March 1998 (You-Jie, 2001). The law covers a wide range of issues such as qualifications for entry into the construction industry, procurement and delivery of works, construction supervision, construction safety, construction quality, legal liability, market regulations and procedures in construction projects. The *Construction Law* and *Port Law* has integrated in all existing port construction related regulations issued from different sources and now governs all activities in the port construction industry, including the issue of permits and licenses, procurement and delivery of works, supervision, safety, quality and legal liability (You-Jie, 2001). As such, within literature there is not many information available regarding the exact details that are applicable to foreign marine contractors. Further research and data collection should provide more details regarding the most relevant legislation issues.

2.6 Approaching the market

So far the literature review determined that the Chinese government plays a dominant and unavoidable role in the dredging and land reclamation market and that trade, urbanisation and China's need for energy drives new market opportunities and demand. However, before Dutch organisation can utilize these opportunities it is important to know which characteristics are essential to become successful in the Chinese dredging and land reclamation market. Therefore, this paragraph will elaborate on those characteristics and attitudes that are necessary for Dutch organizations to become successful in the Chinese dredging and land reclamation market.

2.6.1 Competitive advantage

According to Daft (2006), the competitive advantage refers to what sets the organization apart from others and provides it with a distinctive edge for meeting customer needs in the marketplace. Organizations make decisions about whether the company will perform different activities or will execute similar activities differently than competitors do. As such, these decisions change over time to fit environmental conditions, but to remain competitive, companies develop strategies that focus on core competencies. A company's core competence is something the organization does especially well in comparison to its competitors. A core competence represents a competitive advantage because the company acquires expertise that competitors do not have (Daft, 2006).

Going back to the founders and early contributors of the competitive advantage concept it was Porter (1985) who introduced the idea of the value chains as the basic tool for analysing the sources of competitive advantage. Porter (1985) argued in his notion of competitive advantage that those companies that are able to achieve competitive advantage – that is, above-average performance in an industry sector – are able to reinvest this additional profit into the activities that created the advantage in the first place, thus creating a virtuous circle of improvement, or so-called competitive advantage (Porter, 1985 in Troth 2008) Further, Porter (1990) stated in 'The Competitive advantage of nations' that companies, not nations are in the front line of international competition. Yet the characteristics of the home nation play a central role in a firm's international success. Conditions in a nation may create an environment in which firms can attain international competitive advantage, but it is up to seize the opportunity.

De Wit (2004) states that whether a firm has a competitive advantage depend on the business system that it has developed to relate itself to its business environment. A business system is the configuration of resources (inputs), activities (throughput) and product/service offerings (output) intended to create superior value for customers. However, the fundamental basis of above-average performance in the long run is a sustainable competitive advantage. Barney (1991) states that not all firm resources hold the potential of sustainable competitive advantages. Instead, they must posses four attributes: rareness, value, inability to be imitated, and inability to be substituted. As such Barney (1991) offers the following definition of sustainable competitive advantage: "A firm is said to have a sustained competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors and when these other firms are unable to duplicate the benefits of this strategy". Based on this literature review, Dutch organisations should be in the possession of a competitive advantage to be successful in the Chinese dredging and land reclamation market. A competitive advantage can be obtained by the organisations resources that a.) create value, b.) are rare to its competitors, c.) cannot be imitated and d.) are unable to duplicate the benefits of the firm's strategy.

2.6.2 Government relation strategy

Managing relations with a foreign government is an extremely important task for Western businesses because a small change in a foreign government's trade policy can create a tremendous impact on the firm's business. It is extremely important for Western organisations to find a fit between what their company has to offer (capital, infrastructure development, technology, new jobs, etc.) and what a foreign government needs for its economic, political, and development programs. Many times, the priorities of the Western firm and the foreign government may not match, and the firm will have to use one of the following strategies to manage relations with the foreign government doing business in emerging markets (Ghauri, 1996) (Cavusil, 2002)):

- Alter: The company can bargain to get the government to alter the policy, the instrument, or the action of concern. If the issue is very important to the firm and the firm has the type of power needed to alter the foreign government's action, it should choose the alter strategy.
- Avoid: The company can make strategic moves to bypass the risk or impact of the government's action.
- Accede: The company can adjust its operations to comply with a government requirement.
- Ally: The company can insulate itself from risks by creating strategic alliances.

Figure 7 captures the above four strategies. Depending on the relative importance of the issue to the firm and the relative power of the firm, one of the four approaches can be used. If the issue is very important to the firm and the firm has the type of power needed to alter foreign government's action, it should choose the alter strategy. The firm should choose the accede strategy when the issue is of little importance and the firm has low power. The firm should choose the avoid strategy to avoid confrontation with the foreign government when dealing with issues that are of low importance to the firm, high importance to the foreign government, and the firm is in the position of high power. The firm may choose the ally strategy when the issue is highly important to the firm but the firm is in a low power position.

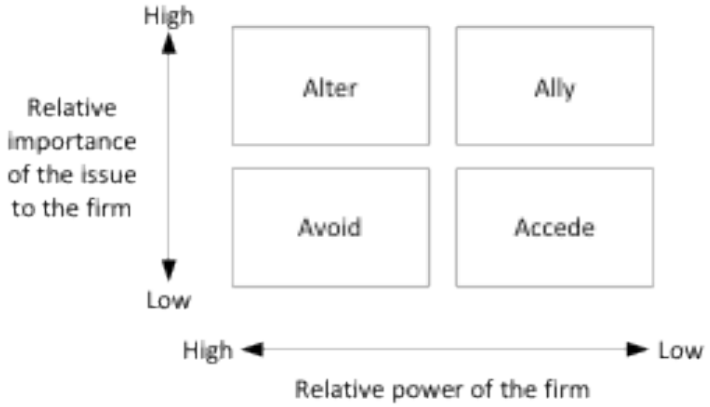

Figure 7: Government relation strategy framework (Cavusil, 2002)

Most of the Dutch firms are used to compete on price, quality, delivery, and reliability dimensions. For the Chinese market, as became clear in the previous paragraphs, an extra dimension has been added: the role and strong influence of the Chinese government. With the fact that the Chinese dredging and land reclamations market is categorized as a 'closed market' for foreign contractors negotiations with the Chinese government are inevitable (IADC, 2010). While preparing for negotiations with Chinese government officers, the Dutch companies must remember that all four strategies require some give-and-take. Minimizing conflict and building a common ground for negotiations remain the two most important first steps toward successful business in emerging markets like China (Cavusil, 2002).

2.7 Conclusion literature study

The literature review elaborated on a number of important conditions that are essential for Dutch marine contractors that want to do business in the Chinese dredging and land reclamation market. Based on this review several choices were made regarding further directions of the research. These are successively:

- Identifying the Political and Legal factor within the PESTEL framework (paragraph 2.1) as the most important factors affecting the development of the Chinese dredging and land reclamation market. Based on several meetings with the Embassy, soon became clear that China's government influence is omnipresent in the Chinese business market particularly in the Chinese construction market. As such, China is ruled by a powerful political party instead of ruling by law using its legal system as an instrument to influence the accessibility within the Chinese construction market for foreign contractors.
- The political struggle of the Chinese government regarding the appropriate role in guiding economic development launched a transformation of the relationship within the construction market. Within the on-going process of market-oriented reform the government maintains a strong but changing role in infrastructural planning and port governance (paragraph 2.2). Lan's framework provides a clear overview of these changing relationships within the construction market regarding the key stakeholder such as the government, contractors, suppliers, clients and new entrants.
- The government's role of planning and policy coordination in China on a port level basis. In relation to its on-going process of market-oriented reform, China's port industry had to develop rapidly in order to keep pace with an ever-expanding economy. The evolution of port governance in China is consistent with and can be explained by, the wider macroeconomic development of the nation via Cullinane's model of China's port governance evolution (paragraph 2.3).
- The macroeconomic drivers as expounded by the PESTEL framework result in five essential drivers behind China's dredging and land reclamation market. According to the IADC, these drivers are world trade, urban development, energy supplies, environmental & coastal defense, and leisure & tourism (paragraph 2.4).
- The Chinese government is using its legal system as an instrument to influence the Chinese dredging and land reclamation market. In order to guide and relate the activities of the infrastructure market

the government has enacted several laws as well as a number of detailed regulations and procedures like taxes and required licenses relating to the qualifications of contractors (paragraph 2.5).

- The government's dominant and unavoidable role requires a clear strategy approach for foreign marine contractors entering the Chinese dredging and land reclamation market. A clear competitive advantage and government relation strategy are essential (paragraph 2.6).

An overview of the literature review is displayed by figure 8.

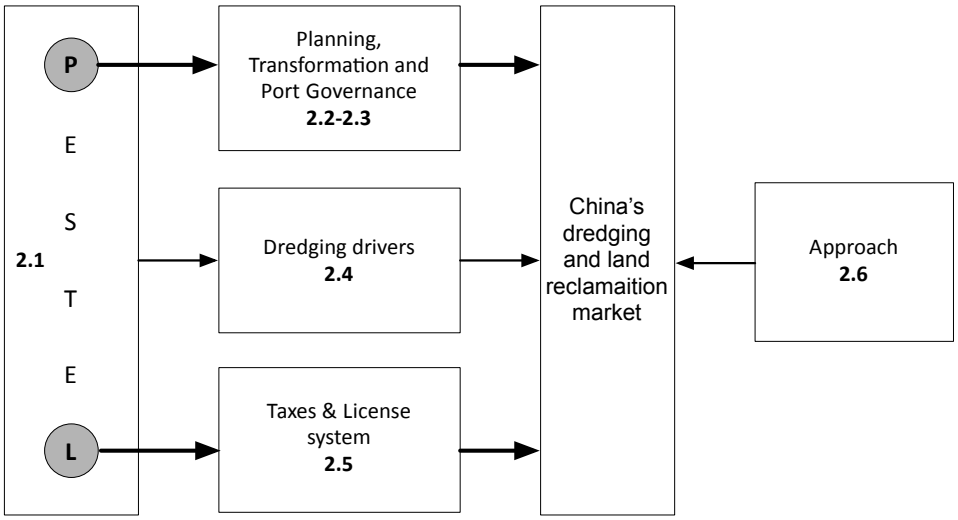

Figure 8: Overview literature review

H3 Methodology

As was discussed in paragraph 1.6 this research is an exploratory research. During the literature review the research narrowed down successively from a macro level perspective understanding of the Chinese dredging and land reclamation market to get a better understanding of how Dutch contractors can do business in this market. Now, before starting gathering information it should be clear what exactly should be measured. As such, this chapter will continue with a conceptualization of the terms used in the research question followed by an elaboration on the right research strategy and data sources used.

3.1 Conceptualization

The main research question and sub-research questions guide the literature review. As such, the following step is operationalizing the concepts from these research questions before starting with data gathering. It is important to clearly define the concepts that are used in the research questions in order to measure the right variables. The questions address the concepts 'business strategy', 'Dutch marine contractors', 'Chinese dredging and land reclamation market', 'Chinese government', 'Chinese port governance', 'Competitive advantage', 'opportunities' and 'threats'. It is important to clearly define these concepts so that the research measures the concept that it wants to measure. As such, when elaborating on the concepts mentioned above, the following is meant:

- Dutch marine contractors: defined as all large marine contractors with their headquarters in the Netherlands operating in international waters. The Netherlands has a rich history in dredging and Dutch marine contractors became world leading in dredging and land reclamation works. In 2009 the Dutch contractors owned more than 40% of all equipment (Trailing Suction Hopper Dredgers, Cutter Suction Dredgers and Backhoes/Grabs) in the world that is necessary for dredging (IADC, 2010). The three well-known and world leading Dutch contractors are: Royal Boskalis Westminster, Van Oord and Dredging International. All three contractors provide services relating to the construction and maintenance of maritime infrastructure on an international basis. Business essentially focuses on construction and maintenance of ports and waterways, creation of constructible offshore land, protection of coastlines and embankments, construction of gas and oil pipelines and the supply of offshore and environmental services.
- Chinese dredging and land reclamation market: is defined as all activities related to dredging and land reclamation in China. Dredging is used to deepen harbors and waterways. Operations are usually carried out at least partly underwater, in shallow seas or fresh water areas with the purpose of gathering up bottom sediments and disposing these sediments to reclaim land. Dredging for the creation of new harbors, berths, and waterways or to deepen existing facilities in order to allow larger ships access is called capital dredging. Because capital works usually involve hard material or high-volume works, the works is usually done using a cutter section dredge or large trailing suction hopper dredge. Land reclamation cover dredging to mine sand, clay or rock from the seabed and using it to construct new land elsewhere with the purpose for new port construction, coastal and shore protection, housing, industrial parks etc. Dredging for land reclamation is typically performed by a cutter-section dredge or trailing suction hopper dredge (Royal Boskalis Westminster nv, 2011)
- Chinese government: all government entities (i.e. CPC, NPC, State Council, NDRC, Ministry of Communications, Local Government, Local Port, Port Group etc.) on the central and local level that are involved in port planning, construction and operations. Take a look at the literature review for a clear and comprehensive explanation of China's institutional setup.
- Port governance: is defined as the transfer of functions or responsibilities for the delivery of programs and services from the federal government to another entity, which may be another order of government or a non-governmental organization, community group, client association, business or industry (Brooks, 2004).
- Business strategy: is defined as the stage of strategic management that involves the planning and decision making that lead to the establishment of the organization's goals and of a specific strategic plan (Daft, 2006).
- Opportunities: are characteristics of the external environment that have the potential to help the organization achieve or exceed its strategic goals (Daft, 2006).
- Threats: are characteristics of the external environment that may present the organization from

achieving its strategic goals (Daft, 2006).

- Competitive advantage: a company has a competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors and when these other firms are unable to duplicate the benefits of this strategy (Barney, 1991).

3.2 Research strategy

China has more than 2.000 ports, from large coastal ports to small finishing marinas (China, 2007), one being more important than the other. As such, the National Coastal Port Layout guides and coordinates the development of 23 main ports by distinguishing five port groups: the Bohai Sea Area, the Yangtze River Delta, Southeast Coastal Area, Pearl River Delta, and Southwest Coastal Area (take look at Appendix F for an overview). With these numbers it is clear that the port construction market is an enormous market that cannot be assed in the timeframe of this bachelor thesis. Therefore, after consultation with the Dutch marine contractors, the decision was made to focus on the coastal cities Tianjin & Caofeidian, Qingdao and Shanghai. Furthermore, this research has a qualitative character. Both qualitative and quantitative techniques are applicable, although exploration relies more heavily on qualitative techniques (Cooper, 2006). Several approaches are adaptable for exploratory research. According to Verschuren & Doorewaard (2007) exploratory research implies that a large part of this kind of research can be covered by a desk study. However, in this research, desk study is complemented with individual depth interviews and expert interviews. The first technique is usually conversational rather than structured, the latter collects information from influential or well-informed people in an organization or community (Cooper, 2006).

3.3 Data sources: secondary data and semi-structured interviews

As discussed in the previous paragraph, this research will use two techniques for data gathering: a literature and desk study complemented with interviews. As such, the literature and desk study starts with a search of secondary sources. Studies made by others for their own purposes represent secondary data (Cooper, 2006). It is inefficient to discover new information through the collection of primary data. So, within the secondary data exploration, the research started with prior research studies. Information was mainly obtained from documentary data like written materials, organizations websites, databases, government publications and statistics, books and journals, industry reports etc (Saunders, 2009). Because this research is largely based on secondary data, it is important to use reliable and valid sources. Reliability refers to the consistency of the measurement, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. At the other side, validity is the strength of the conclusion, inferences or propositions. More formally, De Vaus (2001) defines it as the “best available approximation to the truth or falsity of a given inference, proposition or conclusion”. So, the secondary sources used should be reliable and valid. Although, sources used could not always be confirmed by other sources as information regarding the Chinese dredging and land reclamation is scarce.

Secondly, interviews were used for data gathering. The interview is the primary data collection technique for gathering data in qualitative methodologies. Interviews vary based on the number of people involved during the interview, the level of structure, the proximity of the interviewer to the participant, and the number of interviews conducted during the research. In this case unstructured interviews were used. In this case the interview starts with a few specific questions and follows the individual’s tangents of thought with interviewer probes (Cooper, 2006). It should be noted that an attempt was made using structured interviews. Unfortunately, it appeared after the first attempts, due to the use of an interpreter and resistance of respondents, that the desired information could not be obtained. In this perspective, the use of a semi-structured interview offers a good alternative. Questions were based on subjects, which were covered during the interview. The respondents, which were interviewed, can be classified as experts as most of them were well informed about the subjects discussed.

3.4 Non-probability sampling

In probability sampling, researchers use a random selection of elements to reduce or eliminate sampling bias. Under such conditions there is substantial confidence that the sample is representative of the population from which it is drawn. With a subjective approach like nonprobability sampling, the probability of selecting

population elements is unknown (Cooper, 2006). In this research the latter is applicable. It took much effort to make the right contacts, or actually get an appointment. Occasionally appointments were cancelled last minute. As such, there is greater opportunity for bias to enter the sample selection procedure and to distort the findings of this study. Probability sampling clearly calls for more planning and repeated callbacks to ensure that each selected sample member is contacted. These activities were time consuming and very difficult as most of the Chinese people do not speak the English language properly. While probability sampling may be superior in theory, nonprobability sampling was the only feasible alternative in this research. In the end, the sample covered a large number of different stakeholders within the Chinese dredging and land reclamation market (see table 2) covering most of the entities described in the different theoretical concepts.

Table 2 summarizes which entities (and which not) were interviewed in relation to the theoretical concepts applied. Based on this table it can be concluded that there is one important entity that could not be interviewed: Chinese Marine Contractors. As such, the research will try to make a benchmark based on the experience of Dutch Marine Contractors in China.

Entity:	Company/Insitution name:	Theoretical concept:
Dutch Marine Contractors	1. Boskalis International bv 2. Van Oord (Shanghai) Dredging Co., Ltd	1. Lan's framework – New Entrants
Chinese Marine Contractors	1. Missed	1. Lan's framework – Contractors and Subcontractors
Dutch Consultancy organizations	1. DHV Engineering Consultancy Co., Ltd	1. Lan's framework – Suppliers 2. Cullinane's Port Governance
Chinese Consultancy organizations	1. Missed	1. Lan's framework - Suppliers
Dutch knowledge and government institutions	1. Dutch Consulate-General Shanghai 2. NBSO Qingdao 3. NBSO Tianjin	1. Background information
Chinese Water/Port Authorities	1. Shanghai Water Authority	1. Lan's framework – Clients 2. Cullinane's Port Governance
Chinese Local Governments	1. TEDA Ocean Development Group 2. Committee of International Eco-city Caofeidian/Tangshan 3. Qingdao Urban Planning Bureau 4. Qingdao Municipal Foreign Affairs Office	1. Lan's framework – Clients 2. Cullinane's Port Governance
Chinese Local Ports	1. Qingdao Port and Shipping Admin. Bureau 2. Shanghai Lingang New City	1. Lan's framework – Clients 2. Cullinane's Port Governance
Chinese Local Port Groups	1. Shanghai Harbor City Group Administrative Committee 2. Tianjin Port Group 3. Qingdao Port Group	1. Lan's framework – Clients 2. Cullinane's Port Governance

Table 2: Stakeholder within the Chinese dredging and land reclamation market

Appendix H. provides a long list with all the contact details of entities and people interviewed

3.5 Conclusion methodology

After the literature review the research aimed at the inevitable influence of the Chinese government in doing business, the business opportunities offered by the Chinese dredging and land reclamation market and finally the approach of Dutch marine contractors to utilize their sustainable competitive advantage. Following the literature review, this chapter has conceptualized the terms and concepts used within the research questions. The actual research will mainly carried out through a literature/desk study based on secondary data complemented with expert interviews on a semi-structured basis. Therefore, literature sources were checked on reliability and validity as good as possible at all times. As such, the literature review, desk study and interviews will be used as input for the results from this research.

H4 Data

4.1 Lan's framework – transformation of the construction market

The research conducted an analysis of China's construction market from a macro perspective. For this purpose Lan's framework was used. Under influence of the four driving forces – government intervention, institutional framework, competition and pricing – the model analyses the market side of the construction industry structure. As was decided in paragraph 2.1.7 special attention will be given to the forces government intervention and institutional framework. From the government perspective the role of the government has been changing dramatically. The most distinguishable change is that governments at different levels no longer assign construction work to construction enterprises. They have withdrawn from the operations of construction firms. In addition, the intervention of government in the construction market has shifted from direct ownership of projects to indirect control through financial leverage. Furthermore, the national government has conditionally opened its construction market to foreign investment and foreign contractors. However, unlike Western countries, Chinese government intervention in the construction market and in the construction industry is till pervasive and influential. This chapter will elaborate on Chinese government intervention on a more in-depth basis via its port governance. But first, the influence of the macro factors affecting the market transition on the stakeholders such as contractors, suppliers, clients and new entrants will be discussed.

4.1.1 Transformation of contractors and subcontractors

During the transition from a planned economy to a market economy, contractors and subcontractors developed very quickly. For the first time state-owned contractors have to search for work through market competition. Before the reform, Chinese contractors were assigned construction work by the government with no formal relationship between contractor and client. According to Mr. Li Bao Qiang (2008), projects were constructed by the contractors based on a design budget that was determined by the government. But contractors experienced several changes. Firstly, contractors are formally forced to ensure their projects via the marketplace as the government withdraw his role as a client and separated ownership and management. Now projects are increasingly assigned by tendering but in fact foreign contractors are chanceless within these tendering procedures (WU, 2009). Secondly, the prices for construction services are no longer fixed by the government and are subject to market fluctuations. Traditionally, the cost of construction materials, construction machinery, labour and profit margins for contractors were set by the central government. As such, prices for construction activities were standardized. Prices for construction became more flexible and there is more space to deal with construction costs and profit margins. Based on these changes, prices for construction services are currently set by the interaction of contractors and clients within an ever-widening circle.

During the period of centralized control, the main contractor in China was responsible for all the work involved in a project. Recently, due to the fast rate of development and the huge demand for construction labour, adopting a subcontracting system has become unavoidable (the so called two-tier subcontracting system). At present, this two-tier hierarchy covers all construction enterprises in China (Yuan, 2008). The first tier consists of general contractors that are divided into different classes according to their work history, licences obtained, number of qualified staff and capitalization (as such, but in a more extensive form, this classification is also applied to foreign contractors). Further down the contractual chain are construction contractors. Their role is to build the projects. Again, these contractors are divided into categories according to the nature of the projects – dredging, electronics, tunnels, etc. In each category there are between two and four classes or grades. The criteria are similar to those for general contractors, but with the emphasis on certain specified technical requirements. Within Chinese dredging and land reclamation four grades are distinguished namely AA, A, B and C (Appendix G shows the most important grades for foreign marine contractors – class AA, A and B).

4.1.2 The increase of clients bargaining power

In China, as in other counties, clients are a heterogeneous group. Their interests and the approaches they take to project initiation and delivery tends to be diverse. Nevertheless, Chinese clients have several distinguishing features at the present stage in the country's development. Firstly, the state-owned sector still plays an

important role in China's economy, particularly in absorbing investments, though its share in production has dropped. However, over half of current construction and installation work in China still comes from the state-owned sector. This disparity on the one hand shows the difficulty for reforming Chinese state-owned enterprises and on the other hand it indicated that allocation of resources in China is not fully governed by the market force (Qiang, 2008) Further characteristics are:

- Due to incomplete reform, many clients in China take short-term views on their projects, or only have a short term planning for their projects.
- It is common in China that a client develops a project without the necessary capital. It is tradition for Chinese enterprises and/or local authorities to have a 'hidden capital gab' when they submit their project proposals to relevant authorities or the central government for approval. Therefor more and more clients are asking contractors to undertake projects with their own capital.
- Chinese clients tend to use improper, sometimes illegal practices in the management of their projects. Often tenders are closed which means that many deals were made 'under the table'. Since the open tender system is not yet widely applied, corruption is pervasive in the Chinese construction industry. It is common for clients to ask for 'kick-backs', to insist on using certain poor quality building materials, or to seek to minimize the cost of construction by selecting the lowest bid.

The three characteristics as mentioned above have dramatically transformed the relationship between clients and contractors in China. More complicated relationships are being forged as various independent investors have replaced the government as main client of contractors, so diversifying links between contractors and its clients. However, clients are more adept at playing the market than contractors, partly because of the stagnation of contractors in ownership reform. As a consequence, the bargaining of clients shows an increasing trend, which can be seen from the increasing number of contractors willing to undertake projects with their own capital.

4.1.3 Changes of relationship between contractors and suppliers

Following deregulation in the 1980s there was a fever of investing in construction material production by different industries in different regions. As a consequence of this investment fever, concentration of construction material production in China is very low. The top 100 firms account for only 15% of total production (Lu, 2008). This low concentration of construction material may be attributed to two reasons. One is the domination of rural firms in this sector. The other reason is that there are no ministry-owned firms in this sector, unlike in other industries. Ministry-owned firms are usually regarded as key players. As a result of their national importance they usually receive privileged treatment such as early possession of advanced new technology. A lack of such key players would make it difficult for small suppliers to gain economies of scale, to influence the market, and to promote technological progress nationwide. As such, contractors try to form joint ventures with construction building producers. This backward integration of contractors further diminishes the bargaining power of construction building producers.

4.1.4 New entrants

Chinese contractors currently face two kind of threats generated by new entrants into the industry. One is the trend of entering foreign contractors with capital and superior technology at the top end of the market, and the other is low cost rural construction teams flooding into the lower end of the market. Although growing rapidly, the rural construction teams are poorly equipped and poorly managed. When they first entered the market, they mainly undertook unskilled labouring work. As they gained certain technical and management skills, some of them began to compete with construction enterprises. Due to their very low overheads, low labour costs, low profit margins and usually lawless management, they not only took construction work in rural areas and small towns, but also entered into urban areas. Some of them have developed into independent subcontractors and even contractors. The emerging closer relationship between unregulated clients and lawless rural construction teams has become an immense concern for construction enterprises and the government. Many problems, such as project quality, illegal practices and corruption, are tied to this relationship (Lan, 1999).

Although there are some limitations to the entry of foreign contractors and foreign investors into the Chinese construction industry, many gain access in China as a result of their strength in technology and capital. Generally speaking, there are two ways an overseas construction company can operate in China. One is to undertake construction projects without having Chinese 'legal person status'. Under a decree of the Ministry of Construction, an overseas contractor applies for a license from a particular provincial government if it operates only in that province, while it must apply for a license from the Ministry of Construction if it operates in more than one province. The other way for an overseas construction company to operate in China is to have a local subsidiary, usually a joint venture.

4.1.5 Conclusion: opportunities and threats

Based on Lan's framework the research can distinguish several opportunities and threats. Before continuing with port governance the opportunities and threats will be summarized.

Opportunities:

- Opening up of the marketplace as the government withdraw his role as a client and separated ownership and management;
- Projects are increasingly assigned by tendering;
- Prices became subject to market fluctuations and became more flexible to deal with construction costs and profit margins;
- Foreign contractors can provide capital and superior technology at the top end of the market.
- Closer relationship between unregulated clients and lawless rural construction teams resulting in inferior project quality.

Threats:

- The two-tier subcontracting system restricts foreign marine contractors to act as a subcontractor only. Classes are distinguished by work history, license obtained, number of qualified staff and capitalization (Appendix G). For foreign contractors extensive requirements are set like a partnership with an experienced Chinese contractor. The latter is rare;
- Clients and principals develop a project sufficient or without capital. This 'hidden capital gab' bring about uncertainty and a high rate of credit risk;
- Clients and principals practice improper and illegal activities in the management of their projects. This entails mainly uncertainty within the tender process as deals were made 'under the table'. Corruption is pervasive in the Chinese construction industry relating in increasing bargaining power of clients;
- Competition with low cost rural construction teams into the lower end of the market.

4.2 Port governance

The way in which government controls and influences port development varies from country to country, depending largely on its level of direct involvement in the port business. As became clear during the literature review there exists a great difference between counties like the UK for example and China. Countries such as the UK have gradually reduced their port authorities power to establish a more liberal business environment where China still have the means to intervene strongly in port development and port terminal operations.

According to Mr. Yingfu (2009) in practice, there is not a clear distinction in Chinese port governance between the main stakeholders – Ministry of Communications, Local Port Authority, Local Government, Local Port Group and Terminals – as stated and proposed by Cullinane (2007). As such, there is not one clear structure of port governance at the moment. Chinese port governance encounters a slow transition towards a decentralized structure. In varying degree, port authorities control and manage land and its use in the port area, form various ownership structures to increase private sector participation in terminal operations, allocate vessels to terminals, prepare port development plans and hire contractors. In fact, port authorities in China still exercise their power via Local Government and the Local Port Group as stated by figure 9. The more strategically important a port is for China's economy, the more complex port governance. As such, this doesn't mean that at the same time a port has a highly centralised structure. In the case of Shanghai for example, China's number one port (Appendix C), about 62% of container operations in Shanghai are handled by Shanghai Container Terminals Ltd (SCT), a 50:50 joint venture between Hutchinshon Ports Shanghai Ltd (HPSL), which is part of

Hutchinson Port Holdings, and the Shanghai Port Container Co. Ltd (SPCC), which is under the administration of the Shanghai Port Authority. Currently the port of Shanghai is the only port in China that fits accordingly to Cullinane's (2007) port governance model.

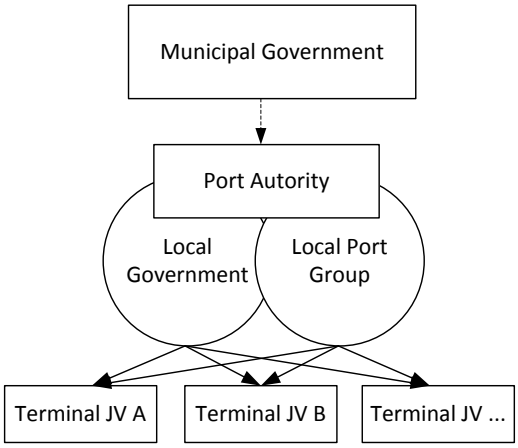

Figure 9: China's current port governance

During several interviews the powerful role of China's port authorities emerged. The definition of port authorities' roles in China remains a somewhat grey area. Theoretically at least, and as stated in the Port Law of 2004, the idea of separating the port administration from port operation in redefining the role of the port authority has been long discussed and accepted. In practice, however, the implementation of such separation remains difficult. The first and foremost obstacle lies in how to achieve financial sustainability of state-owned operations. In achieving 'separation', it is a common practice among Chinese ports to establish a 'Port Group Co. Ltd' registered and listed as the independent entity to replace the operating role previously carried out by the port authority itself or its subsidiary firm (of which it controlled majority shares), and at the same time set up a new 'Port Administration Bureau' to carry out regulatory responsibilities on behalf of the municipal government. Individual port authorities become under the dual-leadership of the MOC and municipal government the port is located in, with the local government being in charge of most duties.

According to Mr. Gang (2009) China's port governance structures are complex and never the same because the government takes and acts from three different positions namely customer ('client' according to Lan's framework), financer and regulator. With the deregulations the role of government as customer or client is decreasing. According to Mr. Yingfu (2009), the share of the state budget in total investment in fixed assets dropped. It is worth noting, that different governments still influence the construction market through various instruments. For example, the national government continues to directly run large public projects (think about projects like the Three Gorges Dam). Or the government still directly controls state-owned enterprises, which remain a main market for construction projects. Secondly the government acts as a financier. Differing from Western countries, the Chinese government is directly involved in the operations of 'commercial banks'. Therefore, about 20% of construction projects, which rely on domestic loans, are directly controlled by different levels of governments. The intervention of government, through the operations of 'commercial banks', spreads to many other construction projects, though their investment is not as tightly controlled. Thirdly the government acts as a regulator. While the role of government as a customer and clients is decreasing, the role of government as a regulator is increasing. Many more regulations were made in the 1990s than in the 1980s. The scope of regulation is also enlarged. At the national level, the following issues have been the priorities of regulation making: introducing a licensing system, regulating the chaotic construction market, improving project quality, estimating construction costs and reforming construction enterprises.

In addition to regulate or change the operational environment of construction enterprises, the Chinese government has conditionally opened its market, though there is still strong protectionism. At the national level, the Ministry of Construction in China, by a licensing system, limits overseas contractors local operations to the following four cases:

- Projects funded solely by overseas investment or funds;
- Projects with loans from multinational institutions and open to international bidding;

- Projects jointly invested in by Chinese and overseas companies where Chinese enterprises have difficulties in contracting alone due to technical difficulties;
- Projects with total Chinese investment, which cannot be constructed by Chinese contractors alone. Overseas companies are allowed to jointly contract these projects with their Chinese counterparts upon the approval of the relevant construction administrative departments at provincial level (so indirectly at central level).

It is apparent that the national Chinese government sets technology and capital as two preconditions for foreign contractors into China. This can also be observed from China's control over the inflow of foreign investment into its construction industry. In order to gain more advanced technology, China does not allow foreign contractors to set up wholly owned subsidiaries in its territory and limits foreign contractors local operations to the same scope as there local partners. In order to generate more capital input, the Chinese government requires high levels of registered capital for foreign-funded construction enterprises. At the local level, local authorities have concern with employment. Governments at all levels are keen for the construction companies within their region to win contracts. When competition is intense, interference form local government is strong. In the last decade, over one-third of municipalities and provinces in China were formulating special regulations to protect 'their' construction market.

4.2.1 Conclusion: opportunities and threats

Based on Cullinane's framework the research can distinguish several opportunities and threats. These opportunities and threats will be summarized.

Opportunities:

- As the separation between port administration and operation remains tough due to difficulties in the creation of financial sustainability, foreign contractors can react by filling this gap of financial resources (i.e DBOT – Design Build Operate Transfer or in any other form). As a result, the chance that foreign contractors will be rewarded within tender procedures increases.

Threats:

- There is not a clear distinction in Chinese port governance regarding the main stakeholders. There is not one common port governance structure for every port in which stakeholders all have the same responsibilities. As such, it is difficult for foreign marine contractors to approach and get in contact with the right responsible stakeholders.
- Due to the increasing role of the government as a regulator foreign contractors are limited by more sophisticated tax and license systems (see also 4.3), restricting them of doing business in China.

4.3 The legal system

As was shortly mentioned in the previous paragraphs foreign contractors are exposed to a lot of restrictions and regulations. With the actual protection measures in the Chinese dredging sector it is difficult for foreign dredging companies to do business in China. After decennia of efforts, finally since 2005 each of the four well known Dutch and Belgian dredging companies (Boskalis, Dredging International, Jan de Nul, and Van Oord) have been permitted to "charter out some of their dredgers" for a few dredging and reclamation works in China. Their activities are still small, but slowly increasing. However, they still meet a number of constraints while dredging in China, the most important issues at this moment are the tax and the 'market access/license requirement' issues. In both cases the treatment is not equal, the foreign dredging companies pay much higher taxes than local companies and the non-tariff trade barriers are so high that market access is not possible. It is only possible to operate with "chartering a foreign dredge" to a local dredging company.

4.3.1 Taxes

Local Chinese dredging companies pay a business tax of 3% on project turnover. Additionally they pay also 33% Enterprise Income Tax on the net consolidated profit per year. In practice the net consolidated profit in this sector is only a small percentage of the yearly turnover. In case the yearly profit on total turnover would be 3-6%, which is already very high, the Enterprise Income Tax is in the order of maximal 1-2% on the turnover.

In some cases the capacity or the types of vessels available within these Chinese companies is not sufficient or adequate and they charter from a foreign dredging company to do a part of the job. The earlier mentioned foreign dredging companies are always working in China as a dredger chartering company to a local Chinese company (whose role can be a main- or subcontractor, charter party, or Joint Venture partner within a project, but possessing a dredging license). The foreign company temporary imports its dredgers for a particular project and, after finishing, the ship leaves the country again (the so called 'hit and run' strategy). For the activities, carried out under a Chinese contract, the foreign company is obliged to pay 20.52% tax (3% Customs Duty and 17% Import VAT) and 10% withholding tax, both on the project turnover or actual the charter fee. Including 3% Business tax, the total amount of taxes on a project, carried out by a foreign dredging company is 34,73% on the charter fee, which makes their activities for the project very expensive in comparison with local companies.

Taxes	a. Local dredging company using foreign new built dredgers in % of project turnover	b. Foreign dredging company, working as a chartering company under a Chinese contractor in % of charter fee.	To Whom
Customs duties	----	3% of 100% = 3%	CH
Turnover tax (called ImportVAT in China)	----	17 % of 103% = 17.51%	CH
Withholding tax (compensation for EIT(enterprise income tax))	----	10% of 103% = 10.3%	NTB
Business tax	3%	3% of 130.81 % = 3.92%	LTB
33% EIT of net consolidated profit/year	1-2 %	----	NTB
Import duties on foreign build dredgers	Maximum 0.73 % on turnover	----	CH
Total	100% plus (4-5.73%)	100% plus (34.73%)	

Table 3: Comparison of taxes, to be paid for the project, carried out by either:

a. Local companies, using imported new dredgers and paying import taxes and EIT.

b. Foreign dredging companies, working as charter.

(CH=Customs House, NTB=National Tax Bureau and LTB=Local Tax Bureau)

In case local dredging companies buy and import foreign built dredgers, they are obliged also to pay import duties during import of such a vessel. For newly built dredgers, imported by local companies, in most of the cases they have got an exemption of the 20,52% of the Customs Duty and Import VAT on the value of the dredger. As the depreciation period for dredging ships is officially, in the Chinese accounting system, 14 years, the yearly cost is 20,52%/14=1,46% per year on the ship's value. As the net depreciation cost of the ship is normally about 50% of the total project value, the tax corresponds with max. 50% of 1,46% = 0,73% of the project turnover for a foreign imported dredging vessel (table 3). In practice however, the local dredging companies get exemption, after request, for paying these duties for imported dredgers, and additionally they mostly operate with locally built dredgers.

This tax situation is considered as not in agreement with the principles of the WTO and "the level playing field" policy and can be seen as either a "non-equal treatment" in companies with the local dredging industry or "non-equal treatment" case in comparison with the airline and cargo-shipping industry. In other related industries it can be very different, like for the Chinese airline- and shipping line companies.

4.3.2 Tax situation of airline and shipping line industry

Chinese airline- and shipping line companies sometimes also have insufficient capacity available and for that purpose they charter foreign airplanes or cargo vessels at the international market. However for those charter

activities they only have to pay between 4 and 5% business tax plus 10% withholding tax, both on turnover amount of the charter fees, which is much lower than for the charter of dredging vessels (table 4).

Taxes	Local charter company in % of project turnover	Foreign shipping company in % of project turnover
Import VAT (turnover tax)	----	----
Customs duties	----	----
Withholding tax	----	10%
Business tax	3%	4-5%
33% Enterprise Income Tax of the net consolidated profit/year (estimated profit 3%/year)	About 1% of turnover	----
Total	About 4%	14-15%

Table 4: Comparison of taxes, to be paid by local versus foreign companies for chartered cargo vessels or airplanes

4.3.3 Market access/license requirements

The entrance to the Chinese market, for foreign dredging companies wanting to operate as a main contractor or as a Joint Venture (JV) partner, is, at present, almost impossible due to a number of trade barriers. Not only a high amount of requirements are needed to get a dredging license, but even after obtained a license, the foreign dredging companies would only be allowed to carry out a very limited amount (if any) of the dredging projects (only foreign financed and small projects).

Within China, the foreign dredging companies cannot participate directly in a tender, as a main contractor, a charter company or as a full JV partner, without being in the possession of a Chinese license. The foreign companies are forced to join a local dredging company (which can have the role in the project as a main-contractor, subcontractor, charter party, or JV partner, but with a dredging license). Foreign dredging companies have two ways to obtain a license in China, via a Wholly Owned Foreign Enterprise (WOFE) or via an Equity Joint Venture (EJV):

Summarising, two ways are available under which a license can be obtained, being:

- a WOFE (wholly owned foreign enterprise)
- an EJV (equity joined venture with minimum 25% local partnership)

To be accepted as a main contractor or as a full JV partner, the dredging WOFE or a dredging EJV needs to show two documents:

- Business Registration Certificate (BRC)
- Qualification License (QL), issued by Administration of Industry and Commerce. But asking for high requirements in finance and manpower (also take a look at Appendix G).

However, even if the requirements for getting the license for the WOFE of EJV could be fulfilled by the foreign holding company, it would still not be possible to execute most of the dredging works, according to decree No. 113 (see Appendix H) and relaxations 73 and 159. With a license, a WOFE or EJV can only operate as the lowest class company, meaning that they can only work on small, foreign financed projects. Since there are almost no foreign financed projects, this is not realistic at all. In order to obtain a higher class, local experience is required. Decree No. 113 seems to correspond with the WTO obligations and seems to have a permanent character, to be supplemented possibly later by further implementations and details, like circulars 73 and 159 to make it a bit easier for foreign companies. Finally, as discussed before the taxes for WOFE or EJV are about 30% higher than for local companies. Table 5 provides the reader with an overview of the available options.

Options:	Consequences:
Charter own dredgers to local Contractor, Charter party or a JV party with license	Complete dependency on local company with dredging license
Main contractors or JV party, using a local identity like a WOFE or an EJV	Non-tariff trade barriers: 1. Decree No. 113 and Circulars 73 and 158 put many limitations. 2. Very high requirements to get license (QL) like personnel, equipment 3. Existing local dredging companies are strongly favoured, with earlier licenses and about 30% lower taxes. 4. A WOFE or EJV is only allowed to carry out small and foreign financed project, which do hardly exist in practise.

Table 5: Available options and constraints for foreign dredging companies to work in China

4.3.4 Conclusion: opportunities and threats

Based on the tax and license restrictions the research can distinguish several opportunities and (but mainly) threats. These opportunities and threats will be summarized.

Opportunities:

- As a start, although with a great chance on a loss, foreign contractors are now able to charter out some of their vessels.

Threats:

- Foreign marine contractors are not treated equally to local contractors as foreign dredging companies pay much higher taxes than local companies.
- For foreign dredging companies wanting to operate as a main contractor or as a Joint Venture (JV) partner it is almost impossible due to a number of trade barriers like a high amount of requirements to get a license and the limited amount of projects they can execute.

4.4 Dredging and land reclamation drivers in China

The rationale behind all the efforts of Dutch and Belgium marine contractors lies in the fact that the Chinese dredging and land is a booming market. As of today, for the next 5 to 10 years, 4.000.000.000 m3 dredging and land reclamation works have been planned. Apart from that, another 1.500.000.000m3 dredging and land reclamation works have been approved already. Although, the International Association of Dredging Companies (IADC - global umbrella organisation for contractors in the private dredging and port construction industry) categorizes the Chinese market currently as a 'closed' market for foreign contractors who want to do business in China. Notwithstanding its enormous market potential, the volume of dredging executed by state- and/or port-owned companies as well as dredging projects closed to international tenders is still substantial, with China as the number one with 22.9% market share. Globally, the market share of these closed markets was 39% in 2009 (IADC, 2010) (table 6). Despite the difficulties in doing business and trade barriers experienced by foreign contractors this paragraph will elaborate on the drivers behind the numbers mentioned on an in-depth basis.

Turnover per region 2009 (in mln. €)				
	Open market	Closed market	Total	%
Africa	561	87	648	5.9%
North America	15	760	775	7.1%
Latin America	997	33	1.030	9.4%
Europe	1.853	28	1.881	17.2%
Middle East	1.822	283	2.105	19.3%
India	614	0	614	5.6%
Asia	651	261	912	8.3%
China	80	2.420	2.500	22.9%
Australia	464	3	468	4.3%
Total	7057	3875	10933	

Table 6: Turnover per region 2009 (IADC, 2010)

4.4.1 Trade

China has experienced an economic growth that has been driven primarily by international trade (McKinsey, 2009). Cheap labour and better than adequate infrastructure were both required for the export-led growth strategy. With unlimited supply of cheap labour from the rural sector, public investment in infrastructure became the keystone in the government's strategy. A major focus by the government at all levels on infrastructure thus ensued. A series of institutional reforms significantly helped transform the bureaucratic system to one that is highly pro-business. China became the world's factory floor or world's manufacturing powerhouse (WorldBank, 2001) (Liu, 2005). This international trade could not have occurred without port capacity to handle the ever-increasing flow of containers coming from mainland factories (McKinsey, 2009). Looking at Appendix C, 9 of the top 30 container ports are located in China, with Hong Kong, Shenzhen, and Shanghai possessing the top 4. From the perspective of tonnages moved, 11 Chinese ports are ranked in the top 30 with Shanghai on the first place followed by Singapore and Rotterdam. The expected growth of China's container movement as a share of the global market, increased from a 31% market share in 2006 to an expected 34% share by 2011 (Cole, 2008). Both container traffic volumes from and to China and the number of direct calls at China's Ports by ocean carriers have multiplied. Insufficient infrastructure capacity remaining the major obstacle in the country's maritime logistics network as pressure on Chinese port infrastructure increases (UNESCAP, 2007).

In an overall view of worldwide container (Twenty feet Equivalent Unit - TEU) movement a distinction is made between Asia – North America, Asia – Europe and North America – Europe. Among these three major areas, it is expected that Asia-Europe trade will show the strongest growth (9,4% annually) during the forecast period from 2005 till 2015. The prospects for the growth of trans-Pacific trade seem somewhat lower, growing at an average rate of 7,2% per annum until 2015 to an export volume of 43,4 million TEU. North-South routes are articulated around the major production and consumption centres of Europe, Asia and North America, and link these centres with developing countries. It is estimated that the container trade volume carried on the North-South and South-South route show an increasing numbers of approximately 6,9% to 38,8 million TEU. Within the intra-Asian trades, growth of trade to and from East Asia, South Asia and North Asia hold out great promise for the future. China, including Hong Kong and Taiwan, will continue to dominate intra-Asian trade with an expected growth rate of 11,4% per annum from 2005 to 2015 (figure 10).

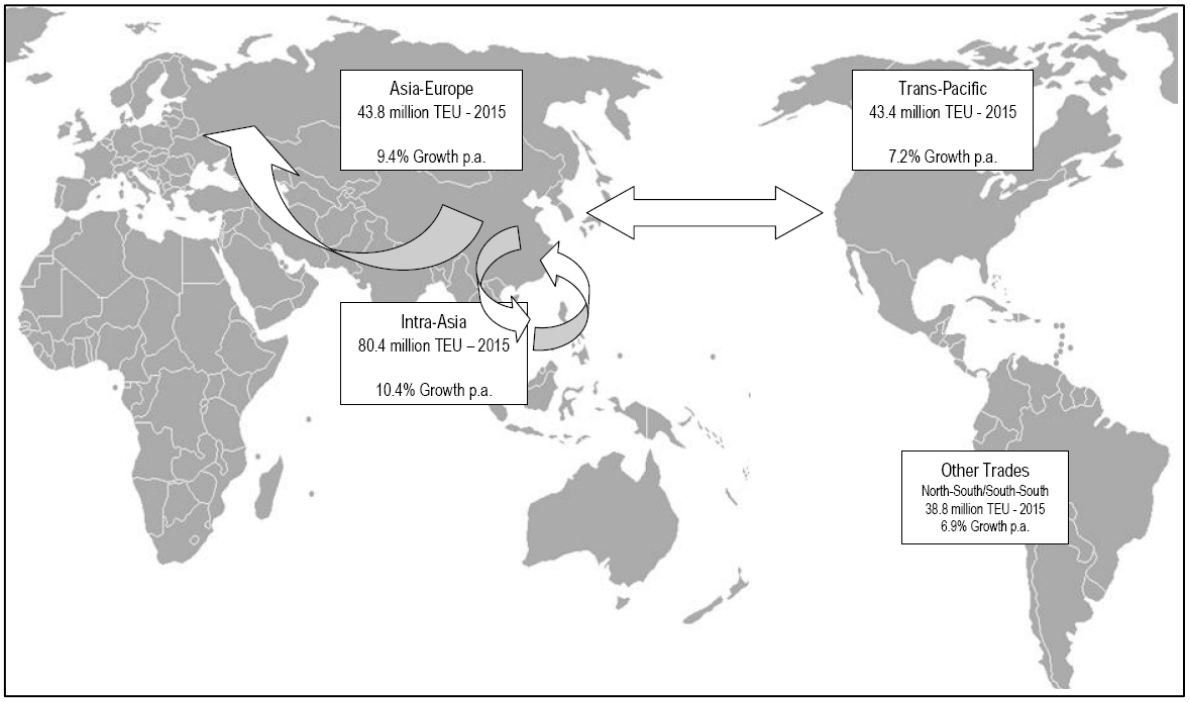

Figure 10: Trade Lane Growth estimated for the period 2005-2015 (UNESCAP, 2007)

4.4.1.1 (Container) Vessel size

Throughout the 1990s a great deal of attention was devoted to larger, more fuel-economic vessels and this indeed produced substantial reduction in costs per TEU of capacity provided. Larger ships typically have a lower cost per TEU-mile than smaller units with the same load factor. Samsung demonstrated that a vessel of 12.000 TEU on the Europe – Far East rout would generate a 11% cost saving per container slot compared to a 8.000 TEU vessel and even 23% compared to a 4.000 TEU unit. Some forecasters predict seventh generation megaships carrying 18.000 TEUs, in pursuit of more cost reductions per container compared with smaller, slower and older vessels. However, a bottleneck will be the ability to move through the Panama and Suez Canals, and through the Straits of Malacca. All three passages are important for China's accessibility to the rest of the world. To handle these new sixth and seventh generation vessels these passages and, not to forget, corresponding seaports need to be expanded. As such, the sixth generation container ships require at least a draught between 16 and 18 meters and a width of 45-55 meters (Rotterdam, 2006). See Appendix D for an overview of the development of six generations container vessels.

4.4.2 Urbanization

According to the United Nations (2010) about 3 billion people, or almost half of the world's population, are currently living along thousands of kilometres of coastal zones. Eight out of ten largest metropolitan cities in the world are located along coastal waters. This phenomenon is also applicable to China. China's urban areas are mainly situated at the coast and important deltas like the Yangtze and Pearl River (McKinsey, 2009). China's coastal regions became highly urbanized and densely populated after China introduced its coastal development strategy or outward-oriented development strategy in 1988 (Song, 2002). Coastal cities were perceived as the main connectors to link China with the global market, and a favourable policy environment was designated in national strategies for their development. As such, coastal provinces showed their magnetic effect in attracting migrant workers from rural areas. Migrant workers filled the employment gap by taking dirty and heavy manual jobs which urban residents are reluctant to take. This trend of rural – urban migration intensified urbanisation in China. Currently, China's national urban population (urbanization rate 53.4%) will increase from 0,71 billion in 2010 to 0,80 till 0,90 billion in 2020 contributing to China's economic development (Kamal-Chaoui, 2009).

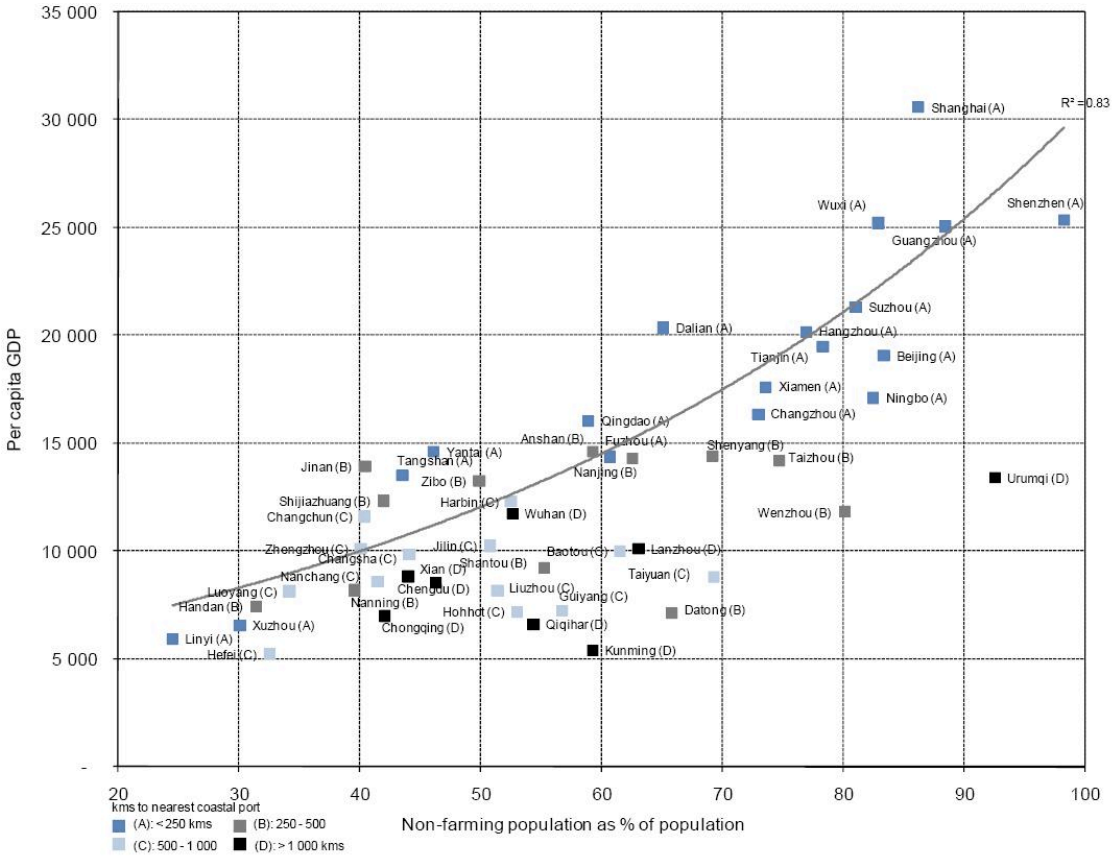

Figure 11: Urbanisation and prosperity in China's 53 metropolitan regions, 2005 (Kamal-Chaoui, 2009)

From an economic perspective, significant correlation appears to exist between the degree of urbanisation and economic prosperity of metropolitan regions in China (Kamal-Chaoui, 2009). Not surprisingly, labour and spatial productivity are higher in metropolitan and coastal regions that are more urbanised (figure 10). The coastal area, with the provinces Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zheijang, Fujian, Shandong, Guangdong, Guangxi, and Hainan covers 13.4% of China's mainland. It offers space to 41.3% of the population that generates almost 60% of China's GDP (China, 2007). Take a look at Appendix E for the share of metropolitan region's share of China's GDP. However, China's rapidly urbanising metropolitan regions face multiple challenges, including achieving acceptable standards of environmental quality, providing levels of infrastructure service required by residents and firms, and providing public services for all residents, including migrants. As such, land available for industrial and residential development is now becoming very scarce along China's east coast. For example, in Shanghai land prices have soared. Over the past five years, the price has more than doubled to 6.478 RMB per square meter for commercial buyer and 3.971 RMB per square meter for residential land in 2005 (McKinsey, 2009). These are the most expensive prices in China, and many businesses have already moved to surrounding cities for this reason. From this point, urban development is a strong driver for the dredging and land reclamation industry and it is expected to continue to be an important on-going driver.

4.4.3 Energy need

The need for resources is now driving China's foreign policy. A booming domestic economy, rapid urbanization, increased export processing, and the Chinese people's appetite for cars are increasing the country's demand for oil, gas and other natural resources (Zweig, 2005). In order to fill the gab between domestic energy production and consumption and maintain the impressive economic growth without further environmental damage, China has adopted the strategy of diversifying the sources and composition of energy. China has now established extensive cooperation relationships with many energy-exporting countries such as Russia, the Gulf States, Australia, Canada, Azerbaijan, Kazakhstan, Venezuela, Sudan, Indonesia, Iraq and Iran (Zhao, 2006) (Austin, 2005) These bilateral trade relationships should secure future energy and resource supply. China's strong increased demand for natural resources like oil and liquefied natural gas (LNG), frequently being exported from remote locations, thereby necessitating new port infrastructures (offshore crude oil terminals,

LNG terminals, cables and pipelines), creates a maritime infrastructure demand of its own. On the sustainable side, more and more wind farms are being placed at sea. In 2009, energy related dredging accounted for an estimated 18% of the total global dredging market (IADC, 2010).

4.4.4 Tourism and Environment

Due to the economic recession, international tourism decreased by 5% in 2009. Despite this decline, the long-term perspective remains very positive (IADC, 2010). Tourism in or near water attracts millions of visitors annually. Water-related tourism has become an important source of national income for many countries. Marinas and cruise terminals, theme parks and resorts; dredging is directly and indirectly an important means by which more tourism can be developed. Dredging for recreation and tourist attractions has often been a spin-off of coastal defence activities such as beach replenishment, dike building and flood defence works in response to the effects of global warming. Finally, dredging related to environment can cover activities like cleaning up contained soil. Within literature, there is not many written about the market opportunities of China's tourism industry and environment related to dredging and land reclamation activities. As such, the report will focus on trade, urbanization and energy as the largest drivers behind dredging, land reclamation and port construction.

4.4.5 Cases: Shanghai, Caofeidian, Tianjin

During the research Tianjin & Caofeidian, Qingdao and Shanghai were visited. Table 7 lists all the relevant projects offering new business opportunities for Dutch marine contractors. For more information regarding these projects take a look at the accompanying market report.

Tianjin & Caofeidian	Qingdao	Shanghai
Lingang Port Area (land reclamation 80 km2)	Sifang Port Area (dredging and port construction)	Lingang New City (land reclamation)
Nanjiang Port Are (land reclamation 10 km2)	Qianwan Port Area (dredging and port construction)	Redevelopment Huangpu River Terminals (dredging and port construction)
Dongjiang Port Area (dredging)	Haixiwan Port Area (dredging and port construction)	Chongming Islands (dredging and land reclamation)
Cargo Logistics Centre (port construction)	Aoshanwan Port Area (dredging and port construction)	Pudong District Terminals (port construction)
Dagang Petrochemical Industrial Park (port construction)	Qingdao High-tech Zone (land reclamation)	Yangshan Port (port construction and land reclamation)
Delta Diamonds (land reclamation)	Qingdao Oild City Area	
Sino-Singapore Eco-city (land reclamation)		
Caofeidian International Eco-city		
Caofeidian Industrial Park (land reclamation 310 km2, remaining area around 150 km2)		

Table 7: Overview of all upcoming project offering opportunities for foreign marine contractors

4.5 Sustainable competitive advantage

4.5.1 Creating value

More than 80% of construction projects in China do not finish on time or on budget. Moreover, the progress of projects are difficult to measure at any point in time, project baselines are often ignored, valuable man-hours are wasted and there is a general inability to schedule and manage resources. There is less emphasis on early planning, and as a result changes in design and structure occur throughout the construction process. In addition, instead of the utilization of human resources 'as needed' (i.e. planners at the beginning, hard laborers only after the design is completed), all employees are employed for the entire duration of the project.

This leads to a large waste of money and man-hours, but given China's large need to provide employment to its people, this particular aspect is generally accepted.

Another problem is the ability to change one's mind during a construction project. This is common throughout China with any kind of project, even outside of the government sector and political projects. Chinese principals expect that, if situations change or they simply change their mind, they will be able to modify the specifications of a dredging or land reclamation project as desired. Moreover, most Chinese contractors are unwilling to say 'No' to any of these requests, since they view the customer as the ultimate sponsor and because culturally they whish to avoid conflict and resolve issues harmoniously. Although this may eventually lead to a satisfied customer, it also results in much waste.

Other issues with Chinese constructors relate to their workforce. Firstly, most of the time migrant workers are used, both those that travel from their farms to work in less busy agricultural seasons and those that are 'relocated' to the city and give up their former work. Both of these groups of workers are highly unskilled. On the higher level, there are few good project managers within Chinese construction firms, and as such they are in very high demand. The lack of good managers is largely responsible for the prevalence of lagging, inefficient projects that are hugely over budget, in addition to poor communication between the firm and the client, unnecessary safety mishaps and poor resource utilization. As such, when faced with international competition outside China, Chinese firms generally only win contracts that are focused on low-end work. From the perspective of a sustainable competitive advantage, Dutch marine contractors can create value with their excellent project management competences and highly skilled employees.

4.5.2 Scarcity

Within the Chinese dredging and land reclamation market scarcity of capacity is a big bottleneck. Three government-related companies dominate the Chinese dredging industry: CHEC Guangzhou Dredging Company (GDC), CHEC Shanghai Dredging Company (SDC) and CHEC Tianjin Dredging Company (TDC). While these three companies are part of the same group, China Harbour Engineering Group (CHEC), competition between them has been increasing. In view of the possible privatisation of these government-related companies, possibly planned for the next few years, competition is only expected to increase. The CHEC dredging fleet consists for 70% of dredging vessels older than 35 years (Bing, 2009). Moreover the total size of this dredging fleet is insufficient to meet all the current dredging requirements of the PRC. As a result GDC, SDC and TDC are all actively in search of partners to construct new and capital intensive dredging vessels or setup new joint ventures with (foreign) partners to execute in co-operation or in sub-contracting dredging projects. But as the research showed before, setting up a joint venture with foreign marine contractors or obtaining the right license to import foreign dredgers temporary is almost impossible due to the unfair tax rates.

4.5.3 Imitation

According to Mr. Xue (2009), abroad the Dutch dredging companies are a model for other nations and favorite service suppliers as well. Dutch marine contractors are there were needed around the globe and are champions in innovation and building unique high tech equipment. So far, Dutch marine contractors experienced imitation and intellectual property theft from some Chinese shipyard. These shipyards imported some dredgers and imitated them. Happily for the foreign dredgers these imitations are in general not as good as the originals. These replicas are maybe half the price as the dredgers from Europe but the lifetime is not even one quarter in comparison to the 'originals'. According to Mr. Wing (2009), imitation is the highest form of flattery, but in today's competitive markets imitation it can also be intellectual property theft. As such, there is still a gap between Dutch marine contractors and its Chinese counterparts but this gap is decreasing rapidly. As such, the leading technological position will disappear fast enough that on the long term technology does not contribute to a foreign dredgers sustainable competitive advantage anymore. As such, Dutch marine contractors increasingly face competition from Chinese marine contractors outside China, although mainly within low-end work region.

4.5.4 Duplication of the firm's strategy

The danger of duplicating the strategy of Dutch marine contractors is high. According to Mr. Wing (2009) dredging is not a rocket science. The Chinese dredgers are catching up regarding technological innovations. The

reason why foreign marine contractors, with a lot of restrictions, are allowed to 'charter some of their dredgers' is that China can learn from the Dutch. A good example that illustrates the duplication of a firm's strategy is the Shell-CNOOC case.

According to the Financieele Dagblad (2011) Shell is 'bullied' by China after it transferred its technical knowledge the last 5 years to its Chinese partner. Currently, the oil company is forced to cut back its largest investment in the country. Since 2006 Shell has a large petrochemical complex together whit the Chinese state oil company CNOOC. The joint venture structure is 50:50 with an investment of $4.3 billion it is to e one of the largest investments of a foreign company in China. Now, CNOOC planned to build a new but the same refinery for $7.5 billion. China would like to contribute but if it gets a role, the share will not exceed 30%. Besides, Shell's current project should also reduce its stake in the current joint venture. The article (Financieele Dagblad, 2011) states that the Chinese want to get rid of Shell. This practice falls within a familiar pattern.

As with Shell case, there is a great chance that the same scenario will happen to the Dutch marine contractors. As such, the high chance of duplication does not contribute to a great sustainable competitive advantage.

4.5.5 Conclusion: opportunities & threats

Overall the report concludes that the sustainable competitive advantage of Dutch marine contractors is weak to moderate. This is visualized by figure 12.

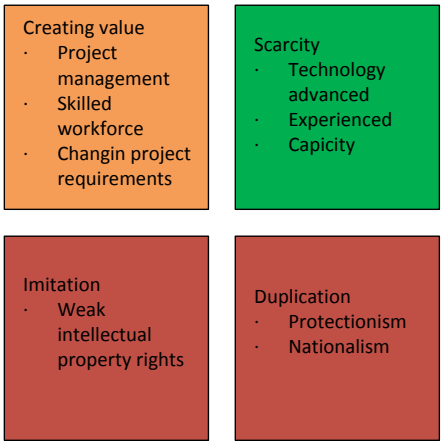

Figure 12: Sustainable competitive advantage for a Dutch marine contractor

Opportunities:

- Based on the expected shortage and scarcity of dredging vessel capacity the Dutch marine contractors can deliver the newest dredging vessels equipped with the latest top notch technology. But as the report showed, chartering out some of their dredgers is not feasible from an economic point of perspective.
- Due to their excellent project management competences, highly skilled employees and comprehensive worldwide experience in complex situation Dutch marine contractors go in front of their Chinese colleagues in creating value.

Threats:

- Dutch marine contractors experienced imitation and intellectual property theft from some Chinese shipyards. Examples are known that Chinese contractors bought Dutch vessels and reversed engineered it to their own designs. As such, the technological gap disappears rapidly, just like the competitive advantage.
- Like with the imitation of dredging vessels, Chinese contractors are quick learners regarding project management and efficient working procedures. Danger lurks on Dutch marine contractors that they lose their lead in technology and experience. As such, the strong Government intervention and ability

to protect the Chinese market from foreign contractors increases the change that these contractors are thrown out after transferring their knowhow to China.

4.6 Government relation strategy

As was discovered during the previous paragraphs doing business by foreign marine contractors is restricted mainly because of China's legal tax and license system. While research by the Embassy's legal counsel has confirmed that a dredging Joint Venture with a foreign partner may be possible, it has become apparent that the obtaining of the required licenses and tax redemption will require extensive lobbying with a number of government stakeholders like the Ministry of Construction, Ministry of Communications, Ministry of Finance and Customs department etc. According to the experience of DHV (Wu, 2009) lobbying is extremely important to become commercial successful. Mainly because contracts are not honoured and are considered to ad hoc opportunism. Three main factors were found that make this so:

1. Relations before business. In China, *guanxi* is the basis of most business transactions, and since these personal connections are strong there may seem to be less need for formalities such as contracts. The reliance on *guanxi* is also problematic for contract enforcement because those agreements are often rooted in a particular personal relationship as opposed to the legal structure. As a result, if an election leads to a change of the government official with whom a business has negotiated, it may find yourself completely out of luck if the new official is not sympathetic and sensitive to that agreement (which is quite likely if the past official was corrupt). This is especially problematic at the local level government, in which personnel changes are more frequent.
2. State owned enterprises. As mentioned earlier, with government enterprises there may less of a concern with money and time rather than politics and image, so contracts might not be so important. Moreover, if the company is not publicly listed, there are not a large number of independent stakeholders who will suffer a direct financial loss if the project is late or over-budget.
3. Culture. Culturally, Chinese firms are more inclined to resolve disputed harmoniously and informally, and there is not a common practise of looking to third parties like courts for help.

Thus, the enforceability of contracts is quite undependable, especially at the local level in which government relations and personal opportunism scoring off most formalities. Given all these factors, it is no surprise that the vast majority of contracts are renegotiated, those that are not ending in arbitration and that international firms put little stock in the contracts they sign. This emphasises the need for an intensive route of lobbying to get the right things done regarding the tax and license requirements. As it is impossible for Dutch marine contractors to get around the Chinese government the 'avoid' strategy is inappropriate. Further on, based on the moderate sustainable competitive advantage in paragraph 4.4.1 the 'alter' strategy is not applicable. The last strategy that falls off is the 'accede' strategy. It is easy for foreign marine contractors to comply with China's tax and license requirements although this is not interesting from a commercial point of view. That is way among the various forms of collaboration, strategic alliance is revealed as the most appropriate form of collaboration for foreign marine contractors in China.

It seems reasonable to propose to the involved Chinese authorities. Split by the tax and license issues, table 8 lists the relevant government stakeholders that should be involved in lobbying practices

Responsible stakeholders for the tax issue	Responsible stakeholder for the license issue
State Taxation Bureau	Ministry of Construction
Custom House	Ministry of Communications
Ministry of Finance	NDRC
Ministry of Construction	Ministry of Commerce
Ministry of Communications	SAIC (State Administration for Industry and Commerce)
NDRC	

Table 8: most important decision makers within tax and license issues

4.7 Conclusion data

Overall, it will be a difficult task for Dutch marine contractors to get a foot on the ground in the Chinese dredging and land reclamation market. The construction market is opening up and transforming due to the decentralization measures but at the same time the government intervenes with more regulations to protect its market from foreign contractors. Because of the legal system with its taxes and licenses it is extremely hard for a foreign marine contractor to participate in a profitable project. The threats in the Chinese dredging and land reclamation market are not compensated by the opportunities at the moment. But from a long term perspective, the development of the five dredging drivers offer a bright future and positive outlook for new business opportunities in the Chinese dredging and land reclamation market. As such, the Dutch marine contractors need to prepare to invest in a long term relationships (*guanxi*) with all the relevant stakeholders. This is an essential basic before the Dutch marine contractors can benefit from the prosperous Chinese dredging and land reclamation market. As such, to increase the chances of becoming successful, the Dutch marine contractors should form a strategic alliance in approaching the Chinese dredging and land reclamation market. The Embassy of the Kingdom of the Netherlands should support this process by using its mediation and lobbying capabilities regarding the tax and license issues.

H5 Conclusions & Recommendations

5.1 Conclusions

This research has provided an answer to the main question: "What business strategy do Dutch marine contractors have to apply in the Chinese dredging and land reclamation market taking China's port governance into consideration?". The main question and its sub-questions guided the literature review, which narrowed down the scope of the macro factors influencing the Chinese dredging and land reclamation market. In order to answer the main question the research focused on government influence regarding the transformation of the construction market, port governance, legal system, sustainable competitive advantage and government relation strategy.

The research subtracted the political and legal factors as the most significant factors within the macro-environmental PESTEL framework that influence the Chinese construction market regarding its port governance. The political government makes little steps toward a more open construction market as decentralization increases and new reforms focus on attracting private capital, increasing transparent funding, stimulate competition, separating state and enterprise and regulating power. But with the on-going process of market-oriented reform the central government maintains a strong role in infrastructural sector planning, financing and policy coordinating. As such, the role of the government as a regulator is increasing by using its legal system indicated by the fact that many more regulations were made in the 1990s than in the 1980s.

The opening up and decentralization driven by the Chinese government impacted the Chinese construction market. It transformed the construction market by letting state-owned enterprises compete in an environment in which market forces become dominant and government interventions are reducing. Applying Lan's framework, the research traced the transformation within the construction market providing a better understanding of the nature of competition as in a free market and the factors involved in creating a market economy from a planned economy. As such, the government withdraws his role as a client and tries to separate ownership and management. Prices became subject to market fluctuations and became more flexible to deal with construction costs and profit margins as project are increasingly assigned by tendering. As such, foreign contractors are getting the change to propose offers that respond to China's need for capital and superior technology at the top end of the market. At the other side, the steps made in opening up the market for foreign contractors are proceeding on a slow pace. Foreign contractors are restricted in their movement by a two-tier subcontracting system which restricts foreign marine contractors to act as subcontractors only. Besides, foreign contractors are exposed to risks regarding projects with insufficient funding and the practice of improper and illegal activities by principals. Finally, competition with low cost rural construction teams into the lower end of the market is hard.

In line with the development of China's construction market the Chinese government also influenced China's port governance practices. Port governance was forced to meet the country's enormous need for port infrastructure. China's port industry had to develop rapidly in order to keep pace with an ever-expanding economy and cargo flows. As such, the government tried to replace the original port authority with a port administration bureau (regulations) and a port business enterprise (operations). But in practice, the separation between port administration and operation remains though due to difficulties in the creation of financial sustainability and ownership. Foreign contractors can react to this by including some interesting capital features in their offer within the tender process. Looking at the regulation concerning port investments foreign contractors are allowed to enter the port market with no limitations on stake, but still there are some unofficial barriers and measures like tax and licenses that make it difficult to participate. Concluding, there is not one port which contains the same port governance structure. As such, it is difficult for foreign marine contractors to approach and get in contact with the right stakeholders.

Through this report the increasing regulating role of the Chinese government is emerging. The government is using its legal system to protect its markets from foreign competition. Within the Chinese dredging and land reclamation market this is mainly achieved via its tax and license system. Although foreign contractors are now being able to charter out some of their vessels to China they are not being treated equally to local contractors. Foreign contractors are exposed to higher taxes which makes business unprofitable. Foreign contractors who want to operate as a main contractor or as a joint venture partner are restricted to impossible requirements to get a license and a limited amount of projects which makes it economically unattractive doing business.

Despite business in China is not profitable for foreign marine contractors at the moment, they have to wonder to approach these losses as an investment in their relationship with Chinese stakeholders. As for the future, the five dredging drivers – world trade, urban development, energy supplies, environmental defense and tourism - forecast a prosperous outlook for the Chinese dredging and land reclamation market. The five dredging drivers, as defined by the IADC, can be explained by the wider macro-environmental PESTEL framework and offer all new business opportunities. As such, Dutch marine contractors should consider to change their 'hit and run' strategy related to chartering out some vessels into a long-term strategy capturing these upcoming business opportunities.

Before Dutch marine contractors can capture these future business opportunities they have to be aware of their sustainable competitive advantage. Based in the expected shortage and scarcity of dredging vessel capacity the Dutch marine contractors can deliver the newest dredging vessels equipped with the latest technology. Besides, they can create value for the Chinese contractors by providing them with excellent project management, highly skilled employees and years of world wide experience in complex situations. At the other side, Dutch marine contracts need to be aware of imitation and intellectual property theft regarding their technology used on their vessels. Danger lurks on Dutch marine contractors that they lose their lead in technology and experience. The strong government intervention and ability to protect the Chinese market from foreign contractors increases the change that these contractors are thrown out after transferring their knowhow to China. From this perspective is important that Dutch marine contractors bundle their strengths in an alliance when approaching the Chinese market. This form of cooperation makes it easier to build an steady relationship (*guanxi*) with the Chinese stakeholders. A weakness of this approach is that the Dutch marine contractors can find themselves completely out of luck when a new official is not sympathetic and sensitive to agreements made with its predecessor. From the perspective of the Embassy of the Kingdom of the Netherlands, they should support this process of government relationship management by using its mediation and lobbying capabilities regarding the tax and license issues.

5.2 Recommendations

Based on the conclusions, the report will make recommendations for the Embassy of the Kingdom of the Netherlands and Dutch marine contractors.

First of all, the report want to recommend to the Embassy of the Kingdom of the Netherlands, to further investigate the following topics regarding the Chinese dredging and land reclamation market:

- The Embassy should use its mediation and lobbying capabilities to achieve tax redemptions on customs duty (3%), import VAT (17%) and withholding tax (10%). Currently, the overall net tax base for foreign marine contractors is 20.52% more than for Chinese contractors. This tax burden is way to high to compete in a business with tight profit margins;
- If tax redemptions cannot be achieved the Embassy should try to lobby for a tax construction like the airline and shipping industry. Within these sectors companies sometimes also have insufficient capacity available and for that purpose they charter foreign airplanes or cargo vessels at the international market. However for those charter activities they only have to pay between 4 and 5% business tax plus 10% withholding tax, both on turnover amount of the charter fees, which is much lower than for the charter of dredging vessels;
- The stakeholders which should be approached regarding the tax issue are the State Taxation Bureau, Custom House, Ministry of Finance, Ministry of Construction, Ministry of Communications and the NDRC;
- Regarding the required licenses the Embassy should to try to relax the requirements for a dredging license. Manly the requirement that a local Chinese dredger has a high grade of experience made it almost impossible to get a license since these parties are rare;
- Further on, the Embassy should focus on the classification the licenses provide. With a license, a WOFE or EJV can only operate as the lowest class company, meaning that they can only work on small, foreign financed projects. Especially the restriction of a fully foreign financed project is rare;
- The stakeholders which should be approached regarding the license issue are the Ministry of Construction, Ministry of Communications, NDRC, Ministry of Commerce and the State Administration for Industry and Commerce.

Based on this research into the Chinese dredging and land reclamation market, the Embassy of the Kingdom of the Netherlands can give the following advice to Dutch marine contractors:

- On the short term, if possessing a dredging license, Dutch marine contractors should focus on projects funded solely by overseas investments of funds, projects with loans from multinational institutions and open to international bidding, projects jointly invested in by Chinese and overseas companies where Chinese enterprises have difficulties in contracting alone due to technical difficulties and projects with total Chinese investment, which cannot be constructed by Chinese contractors alone;
- Due to the attempts to separate port administration and operation difficulties occur in creating financial sustainability. When participating in a tender procedure offers with supportive financial resources will increase the chance of winning the mandate. Think for example about tendering offers like Design – Build – Operate – Transfer (DBOT). As will be mentioned during the discussion chapter this subject is excluded from this research but is a good subject for further research;
- Compete mainly on projects that require capital and superior technology at the top end of the market and dodge the project were competition aims at low cost project into the lower end of the market;
- Apply on projects were excellent project management, highly skilled employees and comprehensive worldwide experience in complex situation is required. The Dutch marine contractors posses a leading position within these competences;
- Although difficult, watch for imitation and intellectual property theft from Chinese contractors and shipyards.
- For the long term, act according to the 'guanxi' principles and cooperate in an alliance together with other Dutch marine contractors. See current losses as an investment in the long-term relationship.

H6 Discussion

In this last chapter some notes and comments will be made according to this research. Then, to finish this report, recommendations for the academic world will be made.

During this research some decisions were made to get a clear guidance within the timeframe of this research. Unfortunately, not al subjects and aspects could be elaborate on due to the timeframe of this research. As such, the following comments are made:

- At first, it would be recommended to put further efforts in researching the other factors from the PESTEL framework. The Economic, Social-cultural, Technological and Environmental factors are intertwined with the Political and Legal factor and should be approached as such. In this case, the size of the Chinese dredging and land reclamation together with the timeframe made it hard to embrace all the factors within the research. Based on several interviews with the Embassy the choice was made to restrict the research towards the political and legal factor. As such, it was expected that these factors had a significant influence towards foreign marine contractors;
- Applying Lan's framework, attention focused mainly on government influence and institutional framework (legal). The driving force 'competition' was mentioned sideways as 'pricing' was passed over. As such, it is hard to get the right information regarding these subjects since government officials are not to able or allowed to speak freely. Further research into pricing will be a hard. This are still sensitive subjects and can be seen a black box;
- Within this research Chinese marine construction companies are not included as it was almost impossible to get an appointment for an interview or even get in contact with the right contacts. From this stakeholder it would be nice to know with whom they cooperate and what kind of technology they are short of;
- Finally, extra attention should be given to the representativeness of the sample used. Often, only one respondent of a certain entity could be spoken to. As such, it was hard to avoid sampling bias. That is why within decision-making; this report should not be used as a single source.

For further research the following subjects are recommended:

- In order to get a higher chance in winning tender procedures further research should focus on the best practices regarding tender procedures within the Chinese dredging and land reclamation market. Tender offers including procurement procedures like Design – Build – Operate – Transfer (DBOT) can provide a solution for the shortcomings in capital for expansion;
- During this research expansion plans can be characterized as overwhelming. Every port in China wants to be number one and competition between these ports increases. As such, the chance of overcapacity is increasing and an in-depth research of necessary capacity in Chinese ports can help Dutch marine contractors in focusing on the right ports and tender procedures.

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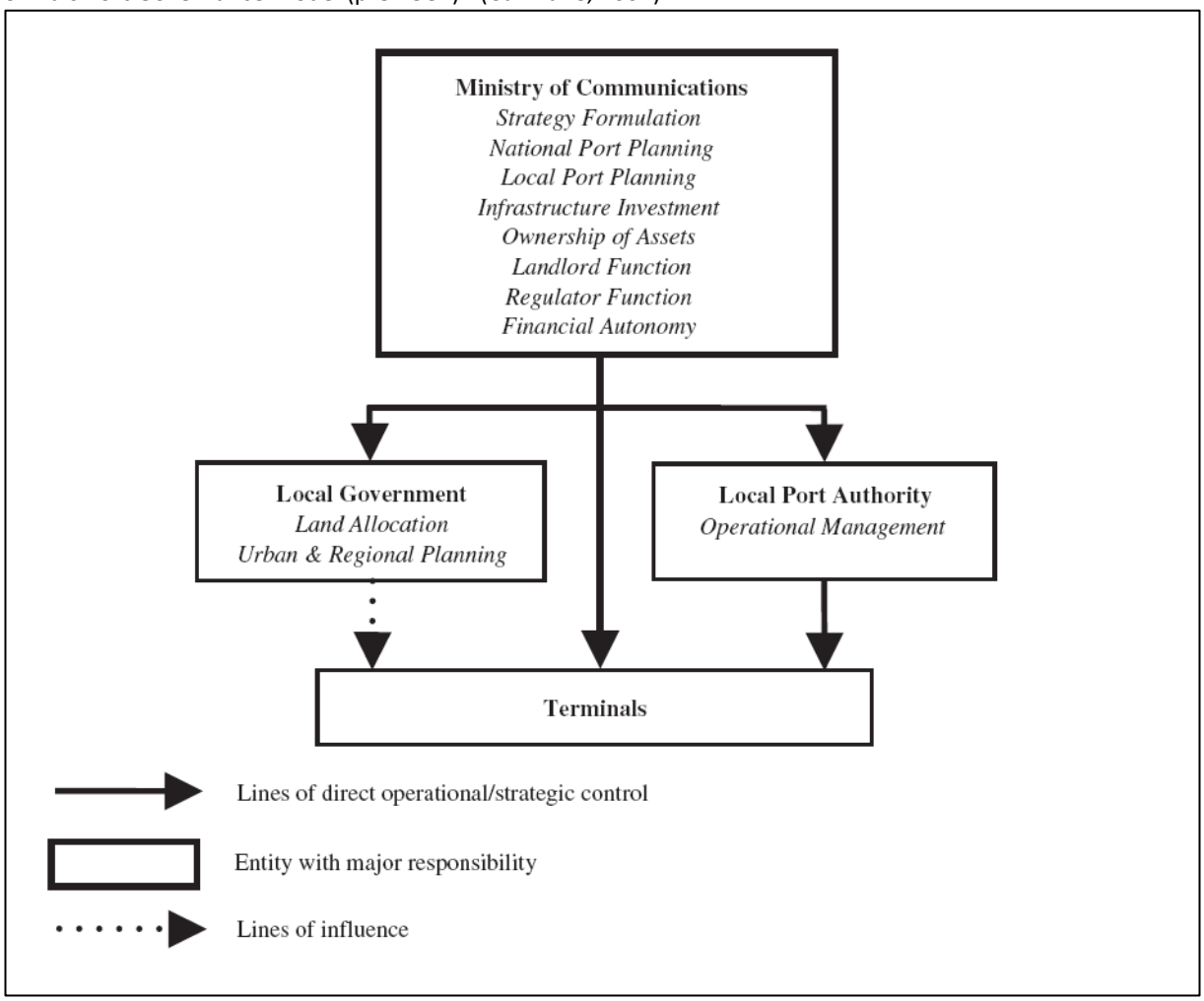
Appendix A. The Role and Responsibilities of Relevant Organizations in Infrastructure (Liu, 2005)

Organization	Role and Responsibilities Relevant to Infrastructure
Central Party Committee	Sets national development policy direction and general guidance to the formulation of long-term and medium-term national socioeconomic development plans
National People's Congress	The national legislative body. Three of the committees are relevant to infrastructure policies and laws: (i) Legislative Affairs, (ii) Finance and Economy, and (iii) Environment and Resources. It reviews and approves national economic and social development plans, national budget, and investment mega-projects such as the Three Gorge Dam.
Chinese People's Political Consultative Conference	A multi-party advisory body, with main functions in political consultation and supervision on major political, economic, and social policies. It is a major channel for constructive criticism of government policies.
State Council	The administrative body of the central government.
National Development and Reform Commission	Formulate and organize the implementation of national socioeconomic development strategy, long-term plan, medium-term plan (i.e. Five Year Plan) and annual plan; provide policy recommendations for macro-economic management and sectoral development of national significance; coordinate policy implementation across sectors and levels of government; set and guide implementation of price policies; determine the size of fixed asset investment; guide and approve major infrastructure investment projects.
Ministry of Finance	Formulate and supervise the implementation of medium- term and annual budget plans; set and supervise the implementation of fiscal policies; supervise central government expenditures; allocate funds to central government investment projects; set public debt policy and manage public debt; formulate state debt issuance plans.
People's Bank of China (Central Bank)	Analyze, formulate, and implement macro financial credit policy based on national socio-economic development policy and sectoral policy.
Ministry of Communications	Line ministry responsible for roads and highways, inland waterway, ports, and ocean shipping
Ministry of Railways	Railways
Ministry of Construction	Line ministry responsible for urban planning, urban development and construction, urban utilities, and urban transport
Ministry of Information Industry	Line ministry responsible for information and telecommunications industry
Ministry of Land and Resources	Line ministry for planning, protecting, and managing the use of, land, mineral and maritime resources.
Civil Aviation Administration of China	Central level bureau for civil aviation.
State Environmental Protection Administration (SEPA)	Sets guidelines for project EIA

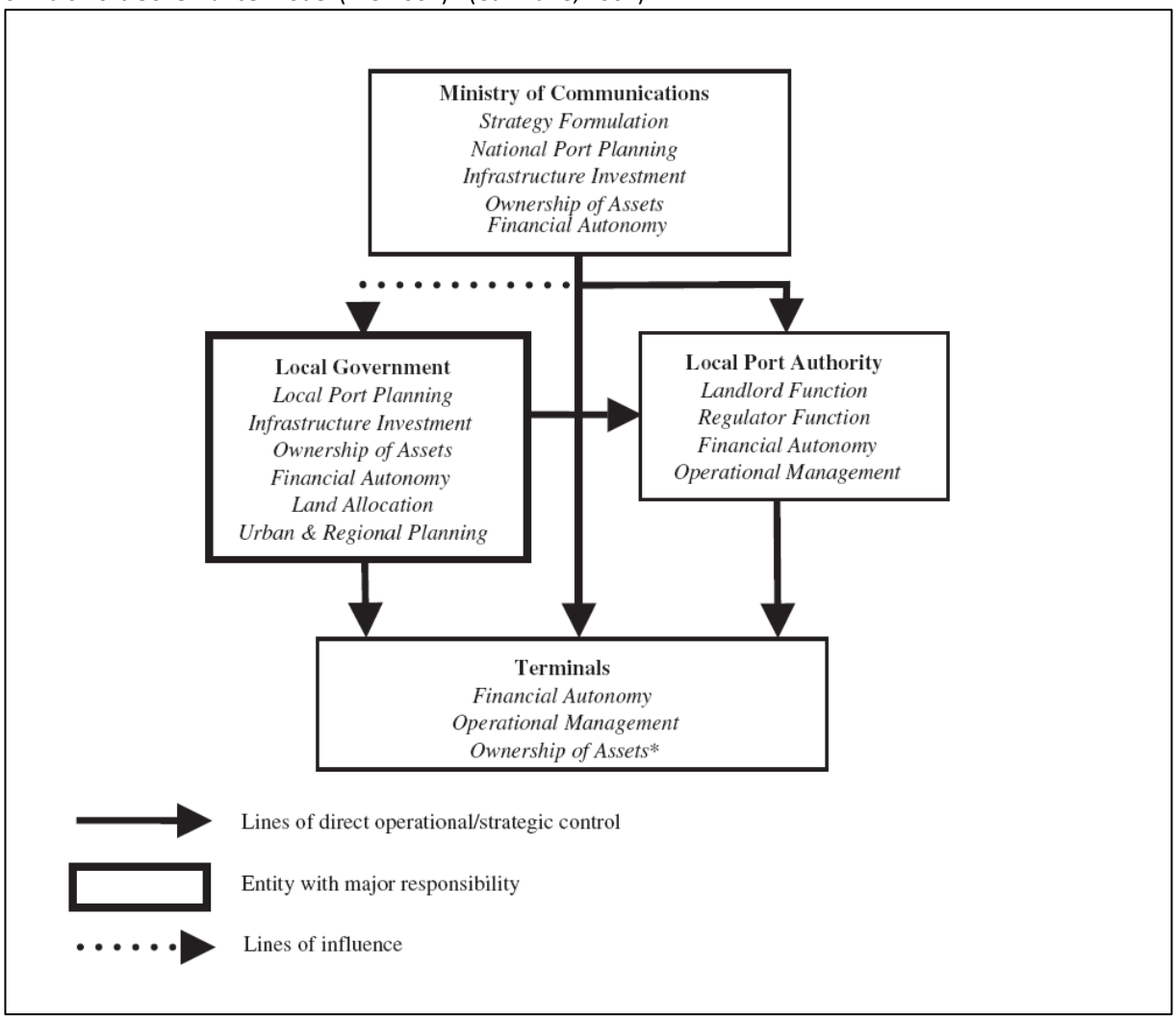
State-Owned Asset Supervision and Administration Commission of the State Council	A special agency established in 2003 under the State Council to supervise and manage the state-owned enterprises (including the infrastructure sector SOEs such as China Power Grid Co) and SOE reform and restructuring.
China Development Bank	A policy bank reporting to the State Council, and heavily involved in infrastructure financing
State Commercial Banks	Infrastructure financing and SOE financing
State Electricity Regulatory Commission	A newly established regulator of the electricity power sector
Development Research Center of the State Council (DRC)	An in-house think tank for the State Council, focusing on the overall, comprehensive, strategic and long-term issues in the national economic and social development, and providing policy recommendations and consulting advice. Among its research departments three are highly relevant to infrastructure: (i) Development Strategy and Regional Economy; (ii) Sectoral Economy; and (iii) Technology Economy (survey and study on major construction projects and regional development projects).
China International Engineering Consulting Corporation (CIECC)	The primary agency designated for the due diligence of the feasibility studies of key investment projects that require approval by NDRC. It provides its services mainly on commission from project sponsors including governments at all levels and enterprises.
Institute of Geography, China Academy of Sciences	Heavily involved in regional planning, regional urban system planning, and detailed surveys of natural resources across the country and assessment of their economic potential.

Appendix B. The development of Chinese Port Governance

China's Port Governance Model (pre-1984) - (Cullinane, 2007)



China's Port Governance Model (Pre-2001) - (Cullinane, 2007)



Appendix C. World Port Ranking 2009

WORLD PORT RANKING - 2009								
TOTAL CARGO VOLUME, MILLIONS OF TONS					CONTAINER TRAFFIC (TEUs, 000s)			
RANK	PORT	COUNTRY	MEASURE	TONS	RANK	PORT	COUNTRY	TEUs
1	Shanghai	China	MT	505,7	1	Singapore	Singapore	25.866
2	Singapore	Singapore	FT	472,3	2	Shanghai	China	25.002
3	Rotterdam	Netherlands	MT	386,9	3	Hong Kong	China	21.040
4	Tianjin	China	MT	381,1	4	Shenzhen	China	18.250
5	Ningbo	China	MT	371,5	5	Busan	South Korea	11.954
6	Guangzhou	China	MT	364,0	6	Guangzhou	China	11.190
7	Qingdao	China	MT	274,3	7	Dubai	United Arab Emirates	11.124
8	Qinhuangdao	China	MT	243,8	8	Ningbo	China	10.502
9	Hong Kong	China	MT	242,9	9	Qingdao	China	10.280
10	Busan	South Korea	RT	226,2	10	Rotterdam	Netherlands	9.743
11	Dalian	China	MT	204,0	11	Tianjin	China	8.700
12	South Louisiana	United States	MT	192,9	12	Kahosiung	Taiwan	8.581
13	Houston, TX	United States	MT	191,7	13	Port Kelang	Malaysia	7.309
14	Shenzhen	China	MT	187,0	14	Antwerp	Belgium	7.309
15	Port Hedland	Australia	MT	178,6	15	Hamburg	Germany	7.007
16	Kwangyang	South Korea	RT	176.5	16	Los Angeles	United States	6.748
17	Ulsan	South Korea	RT	170,3	17	Tanjung Pelepas	Malaysia	5.067
18	Nagoya	Japan	FT	165,1	18	Long Beach	United States	5.950
19	Antwerp	Belgium	MT	157,8	19	Xiamen	China	4.680
20	Chiba	Japan	MT	144,9	20	Bremen/Bremerhaven	Germany	4.578
21	Port Kelang	Malaysia	MT	137,6	21	NY/New Jersey	United States	4.561
22	Kaohsiung	Taiwan	MT	133,6	22	Dalian	China	4.552
23	NY/New Jersey	United States	MT	131,3	23	Leam Chabang	Thailand	4.537
24	Inchon	South Korea	RT	122,1	24	Jawaharlal Nehru	India	4.061
25	Yokohama	Japan	FT	115,5	25	Tokyo	Japan	3.810
26	Xiamen	China	MT	110,9	26	Tanjung Priok	Indonesia	3.800
27	Hamburg	Germany	MT	110,4	27	Valencia	Spain	3.653
28	Yantian	China	MT	107,6	28	Ho Chi Minh	Vietnam	3.563
29	Itaqui	Brazil	MT	105,0	29	Mina Raysyt	Oman	3.493
30	Newcastle	Australia	MT	103,0	30	Colombo	Sri Lanka	3.464

Abbreviations: MT=Metric Ton HT= Harbor Ton. FT=Freight Ton. RT = Revenue Ton.

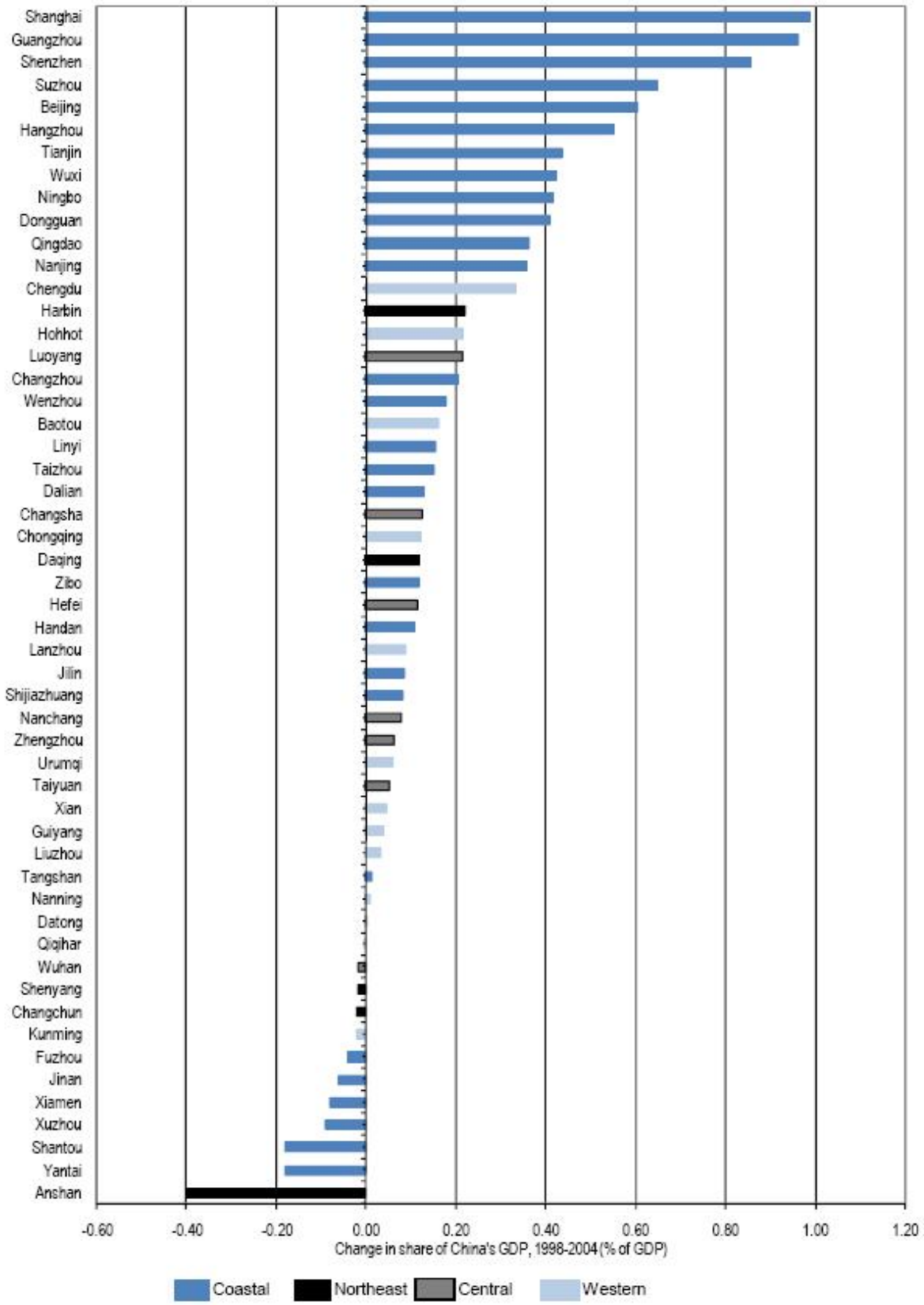
NOTE: *The cargo rankings based on tonnage should be interpreted with caution since these measures are not directly comparable and cannot be converted to a single, standardized unit.*

Sources: *Shipping Statistics Yearbook 2007*; Containerisation International Yearbook 2008;U.S. Army Corps of Engineers, *Waterborne Commerce of the United States CY 2006; AAPA Surveys*; various port authority internet sites.

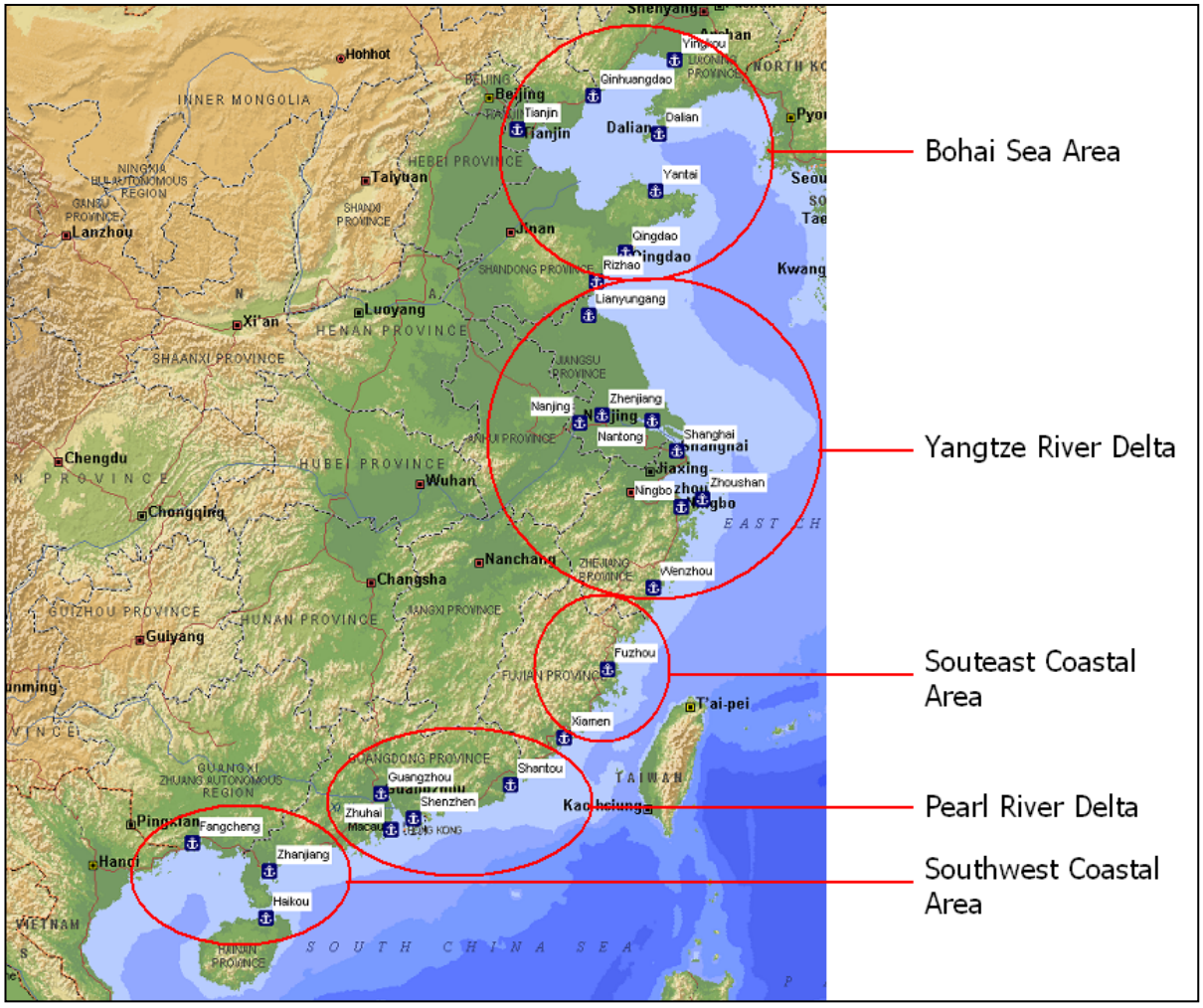
Appendix D. Six generations of Containerships (Rodrigue, 2010)

		Length	Draft	TEU
First (1956-1970)	Converted Cargo Vessel Converted Tanker	135 m 200 m	< 9 m < 30 ft	500 800
Second (1970-1980)	Cellular Containership	215 m	10 m 33 ft	1,000 – 2,500
Third (1980-1988)	Panamax Class	250 m 290 m	11-12 m 36-40 ft	3,000 4,000
Fourth (1988-2000)	Post Panamax	275 – 305 m	11-13 m 36-43 ft	4,000 – 5,000
Fifth (2000-2005)	Post Panamax Plus	335 m	13-14 m 43-46 ft	5,000 – 8,000
Sixth (2006-)	New Panamax	397 m	15.5 m 50 ft	11,000 – 14,500

Appendix E. Change in metropolitan region's share of China's GDP, 1998-2004 (Kamal-Chaoui, 2009)



Appendix F. China's coastal region with its five-port cluster (Qiu, 2008)



Appendix G. Summary of additional requirements for different license grades

Port & Channel construction

Grade AA

1. Registered capital RMB 300 million
2. Net equity > RMB 360 million
3. Average turn-over in the past three years RMB 1.5 billion
4. Plus the other requirements for a Grade A license

Grade A

1. In the last five years 5 of the following items on its track record:
   a. coastal port > 30.000 tons of river port > 5.000 tons
   b. dry-dock > 50.000 tons
   c. >600m breakwater in waterdepth >5m
   d. coastal channel > 50.000 tons or river channel 1.000 tons
   e. >1.000 ton ship lock or >300 ton ship lift
   f. >5 million m3 dredging project
   g. >4 million m3 reclamation project
   h. >150.000 m3 port storage project
   i. >1.000m coastal defence project
   j. >30.000 m3 underwater blasting or rock clearing project
   k. any single project related to coastal port and channel construction with value >RMB 100 million or river project > RMB 50 million
2. CEO > 10 years project management experience or senior title
3. Ch Eng > 10 years project execution
4. Chief Accountant with senior title
5. Chief Economist with senior title
6. >250 TU engineers and management professionals
7. >150 engineering employees
8. >20 employees with senior title
9. >50 employees with mid title
10. >15 Grade A project managers
11. Registered capital RMB 50 million
12. Net equity > RMB 60 million
13. Average turn-over in the past three years RMB 250 million
14. Should own 2 of the following 3 items:
    a. piling vessel > 50 m or > 200 ton floating crane
    b. dredger with 1500 m3/hr or 8m3 grab size
    c. GPS positioning equipment, survey systems such a multi beam or dual beam

Grade B

1. In the last five years 5 of the following items on its track record:
   a. coastal port > 10.000 tons or river port > 3.000 tons
   b. dry-dock > 10.000 tons
   c. >300m breakwater in waterdepth >5m
   d. coastal channel > 20.000 tons or river channel 300 tons
   e. >300 ton ship lock or > 50 ton ship lift

   f. >2 million m3 dredging project
   g. 1.5 million m3 reclamation project
   h. >100.000 m3 port storage project
   i. >500m coastal defence project
   j. >30.000 m3 underwater blasting or rock clearing project
   k. any single project related to coastal port and channel construction with value > RMB 100 million or river project >RMB 50 million
2. CEO > 10 years project management experience or mid title or higher title
3. People in charge of technology > 10 years project execution and project execution and hold senior title
4. People in charge of accounting with mid or higher title
5. Chief Economist not mentioned
6. TU engineers and management professionals not mentioned
7. engineering employees not mentioned
8. employees with senior title not mentioned
9. employees with mid title not mentioned
10. >10 Grade B project managers
11. Registered capital RMB 20 million
12. Net equity > RMB 25 million
13. Average turn-over in the past three years RMB 100 million
14. Should own 2 of the following 3 items:
    a. piling vessel > 30 m or > 80 ton floating crane
    b. dredger with 500 m3/hr or 4m3 grab size
    c. GPS positioning equipment, survey systems such a multi beam or dual beam

Grade C

To low a classification to be of interest

Project limitations

Grade AA: No limit
Grade A: Single contract shall not exceed five times the registered capital

Appendix H. Decree No. 113: "Regulations on Administration of Foreign-Invested Construction Enterprises"

Chapter 3 Scope of Contracting

Article 15: Wholly foreign-owned construction enterprises may only undertake the following types of construction projects within the scope of their qualifications:

1. Construction projects funded totally by foreign investments, foreign grants or foreign investments and grants;
2. Construction projects financed by international financial organisations and awarded through international process in accordance with the provisions of the loan agreement;
3. Sinco-foreign jointly constructed projects where the foreign investment is equal to or greater than 50%; Sino-foreign jointly constructed projects where the foreign investment is less than 50% but which Chinese construction enterprises cannot undertake independently due to technical difficulties subject to the approval of the construction administration departments of the people's government of provinces, or autonomous regions or directly administered municipalities;
4. China-invested construction projects which Chinese construction enterprises cannot undertake independently due to technical difficulties. Such projects may be jointly undertaken by Chinese and foreign construction administration departments of the people's government of provinces, or autonomous regions or directly administered municipalities.

Article 16: Sino-foreign equity construction joint ventures and Sino-foreign cooperative construction enterprises shall undertake construction projects within the permitted scope of their grades of qualification.

Appendix I. Long list – Contact details

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