

Supplementary I Results of regional status assessment

This study takes the year of 2015 as the baseline year for current status assessment and the year of 2010 as the baseline year for retrospective assessment for analysis and assessment of multi-dimension trends.

1.1 Veneto region

1.1.1 Location

Table S1-1 Location conditions of Veneto.

Sub-categories	Description and assessment
Geographical	Located at the northeast of Italy; the famous tourist resort of Venice is to the east; the Italian industrial town of Milan lies west of it; and the Vicenza, Padua, and Venice are involved in Veneto.
Natural conditions	The climate of Veneto is mild and stable with little freezing [1] due to mountains to the northern and ocean to the eastern. Veneto is the eighth largest region in Italy, with fertile soil, developed agriculture, and abundant tourism resources [1].
Ecological conditions	The National Green Infrastructure Strategic Plan has been conducted in 2013 [2], and the Venetian Lagoon and Padua Botanical Garden are listed in the World Heritage Sites by the United Nations Educational, Scientific and Cultural Organization [3].
Economic status	Veneto is Italy's new industrial zone and the largest legal wine production center.
Social status	The Veneto is in large population density and many world heritage sites [4]. This area has a long-standing history and culture, and the capital of Venice is the world-famous "Water City".

1.1.2 Resource

Table S1-2 Resource conditions of Veneto.

Sub-categories	Description and assessment
Natural resource	A total area of 18,399 km ² of Veneto is comprised of 29% mountains, 14% hills and 57% plains. The coastline of Veneto is nearly 200 km long, of which 100 km are covered with beaches [1]. The abundant land resource is good for agricultural use although the freshwater resource with an average annual precipitation of approximately 1,121 mm is not always very favourable [5]. The Veneto region is poor in natural resources but it has values of use of renewable energy [4].
Humanistic resource	The cultural resource of Veneto is enriched with its historic art and architecture, theatres, music, festivals and so on [1]. The tourism resources like "Water City" and World Heritage Sites are world famous [1].

1.1.3 Society

Table S1-3 Social conditions of Veneto.

Sub-categories	Description and assessment
Political civilization	People in Veneto are active in political participation, but in 2015, 22.8% of residents in the area believed that there was a crime problem [4]. Social security is descending with the increasing number of litigations [4].
Family and household	By 2016, there were 4.92 million people in Veneto, with an average annual population decrease of 0.09% [4]. In 2010, domestic wages and salaries showed a slight increase, and the average remuneration of employed persons increased by 0.88% [4]. The annual household income in 2015 was 33,000 euros, an increase by 2.0% over 2010 [4].
Culture and art	Italy is a famous cultural birthplace in the Renaissance and has a rich culture and art [4]. There are many museums and cultural exhibition halls in Veneto [4].
Medical and health	In 2015, 48.1% of the people in Veneto were in good health, an increase from 24.3% in 2010. The number of social and health care facilities per 100,000 residents was approximately 19 [4]. The facilities in Vicenza, Padua, and Venice are about 3 beds per 1,000 inhabitants [4].
Education and technology	In 2010, the access rate of higher education in the Veneto region was 63.6%, and the rate of enrollment was 35.4%, showing a slight downward trend [4]. In 2015, the research and development expenditure in Veneto was 1.68 billion euros, an average annual increase by 2.4% [4].
Administrative management	The traditional “top-down” planning system in Veneto is inefficient that brings implementation of policy contradictions, regulatory overlaps, and uncertain management, and administrative decentralization [3]. The administrative staff training system is relatively complete, but management costs have increased significantly [4].
Environmental management	Environmental management and audit plans and eco-labels have been implemented in Veneto along with environmental education and training [3]. The number of air monitoring stations is increasing and densely distributed [4].
Infrastructure	In 2015, 25.9% of Veneto residents think that parking was very difficult and 35.2% think that traffic problems was severe, down by 2.3% and 1.2% respectively compared with the 2010 data; 34.4% thought street lighting was very poor and 48% thought road conditions were very poor, increased by 5.1% and 5% respectively compared with the 2010 data [4]. The transportation infrastructure network is perfect, but most are old due to their early construction.

1.1.4 Economy

Table S1-4 Economic conditions of Veneto.

Sub-categories	Description and assessment
Economic power	In 2015, the Gross Domestic Product (GDP) of Veneto was 151.8 billion euros with a total added value of 135.9 billion euros, showing an average annual growth of 0.93 % and 0.88 % respectively [4].
Industrial structure	The total value-added of the first, second and third industries in Vicenza is basically stable at 1.4:41.2:57.4; the ratio of total value added of the three industries in Venice in 2010 is 1.6:23.1:75.3, and then the total value added of primary and secondary industries have declined, but that of tertiary industry has shown an increasing trend [4].
Fixed asset investment	In 2014, the total value of fixed assets in Veneto was 24.83 billion euros, down by 18.1% from 2010 [4].
Trade and logistics	In 2010, the export trade of Veneto was 45.6 billion euros, and in 2012 it was 51.1 billion euros (no import trade data); in 2015, road loading and unloading volume were 240 million tons, a decrease of 33.2% compared with 2010 [4].
Finance and taxation	In 2010, the financial income of Veneto was 3.25 million euros and financial expenses were 350.13 million euros [4]. Tax after the deduction of subsidies was 15.86 billion euros, with an average annual growth rate of 1.3% [4].
Monetary and insurance	Italian public debt is very large. In 2010, the accounts receivable of Veneto was reduced by 2.581 million euros, and the retained earnings were - 22.18 million euros, which increased in subsequent years [4].

1.1.5 Environment

Table S1-5 Environmental conditions of Veneto.

Sub-categories	Description and assessment
Air	The air quality indices are mostly acceptable in Vicenza, mostly medium and a few acceptable that in Padua, and acceptable in Venice [6]. All the over-standard factors are PM ₁₀ [6].
Water	In 2015, the proportion of macro-ecological pollution of river water within Level 2 in Veneto was over 70%, which was 8% higher than that in 2010, and the proportion in Vicenza and Padua increased by 4% and 10% respectively. In 2015, however, the number of specific pollutants in Veneto has increased slightly from 2010, especially near the Port of Venice [3,7].
Noise	In 2010, 28.6% noise monitoring value in Vicenza exceeded the limit, and in 2012 only 11.4%; 25% of Padova's noise monitoring value exceeded the limit in 2010, and 11.1% exceeded in 2012; and 17.7% and 81.8% of those values exceeded in Venice, respectively [4].
Waste	The total amount of garbage in Vicenza, Padua, and Venice has been decreasing and the amount of classified collection has increased [8,9].
Environmental risk	The sources of environmental risk in Veneto came from alpine avalanches and seawater intrusion.

1.1.6 Ecology

Table S1-6 Ecological conditions of Veneto.

Sub-categories	Description and assessment
Terrestrial ecosystems	The urban green space density is 3.8% in Vicenza, 8.8% in Padua and 2.4% in Venice. The urban residents' per capita green area is 27.1 m ² in Vicenza, 39.1 m ² in Padua and 37.4 m ² in Venice [4].
Aquatic ecosystems	In 2015, the macro-ecological pollution of river water in Veneto was slightly improved compared with that in 2010, and the proportion of that within Level 2 in Vicenza, Padua, and Venice was below 62.8%. 30.2% and 11.1% [3,7].. The ecological status of lakes in Veneto has been improved since 2010 [3,7].
Sensitive bio-ecology	The area of Nature Reserve is about 0.9% of the land area in Vicenza, 0.1% in Padova and 62.7% in Venice [4].
Ecological risk	The sources of ecological risk in Veneto came from lagoon water exchange and river pollution due to agricultural and industrial activities [10].

1.2 Port of Venice region

1.2.1 Location

Table S1-7 Location conditions of Port of Venice.

Sub-categories	Description and assessment
Geographical	Situated in the Venetian Lagoon and the northern part of the Adriatic sea [11], the Port of Venice is a strategic node of the European transport network, but not on the main routes of the Mediterranean [12].
Natural conditions	The weather in Port of Venice is warm in winter and cool in summer, and the average temperature is 3.3 °C - 23.0 °C without freezing basically [12]. The wind and sea conditions are good [12].
Ecological conditions	Venice and its lagoon are fragile habitats formed by irreversible nature and climate change, and ecosystems are coupled to each other [10].
Economic status	Venice was a very wealthy city in Europe during the Middle Ages and the Renaissance, but by the end of 2016, Venice had a serious budget deficit, debts of more than 400 million euros, and residents of Venice gradually left due to high rental costs [12].
Social status	Venice is the starting point for Marco Polo's trip and the end of the ancient Silk Road. The Port of Venice is the most important port on the Italian Adriatic route [12]. Both Venice and the Venetian Lagoon are listed on the UNESCO World Heritage List, and the Port of Venice received the "Portal Social Integration" award from the European Seaport Organization (ESPO) in 2017. With a long history, Venice has a profound cultural heritage and rich tourism resources.

1.2.2 Resource

Table S1-8 Resource conditions of Port of Venice.

Sub-categories	Description and assessment
Land resource	The area of the Port of Venice is 20.45 million m ² [13], and the yard area of the Vecon terminal where the container passed is 0.28 million m ² [14]. This area has limited land resources.
Port and shipping resource	The Port of Venice is the 8th bustling commercial port in Italy with a water depth of 12-14 m [15]. The Port of Venice has a length of 30,000 m quayside and 852 m container terminal line [13], and shoreline resources are not abundant. The container freight routes mainly travel to and from the Port of Venice and the Mediterranean Port, the Black Sea, the Middle East, and the Far East and India [13].
Water-area resource	The main morphological structure of the Venetian lagoon is 67.30 km ² of natural channels and 435.68 km ² of lagoon beds (including salt flats and muds), and the natural channel reaches a depth of 15 m [16].
Traffic resource	There are a 205 km railway network and a 70 km internal road network in the Port of Venice [13]. The port is the only one that connects to inland water transport in Italy. The terminal connects Milan and Tarvisio via A4 Road [14].
Travel resource	Venice has rich tourism resources, including artistic achievements of architectural, painting, churches, and monuments, and natural landscapes of islands, rivers, bridges, and lagoons [10].

1.2.3 Society

Table S1-9 Social conditions of Port of Venice.

Sub-categories	Description and assessment
Development strategy	The Port of Venice focused on comprehensive development through stakeholder cooperation, streamlined customs procedures, green chemistry, port supply chain construction, etc. [17].
Administrative management	The port operations are guided, planned, coordinated, advanced and supervised by the North Adriatic Harbour Authority, as well as seaport planning and development [13].
Port benefits	In 2015, the Port of Venice handled 25.14 million tons of cargo, an increase by 54.7% compared to that in 2010 with an average annual growth of 10.9%. The container throughput was 5.41 million tons, an increase by 102% compared with that in 2010 with an average annual growth of 20.5% [13].
Infrastructure	The Port of Venice has 163 active berths, 23 cargo terminals, a dedicated cruise terminal and yacht facilities [13]. The capacity of the container terminal is 420,000 TEU per year [14].
Environmental management	The policy of environmental protection and environmental management system of ISO 14001 were established in 2011 and passed in 2012, and energy efficiency measures have been made to improve the air quality in the Venetian Lagoon [18].

1.2.4 Economy

Table S1-10 Economic conditions of Port of Venice.

Sub-categories	Description and assessment
	In this case, the container terminal was operated by VECON S.P.A. and failed to collect relevant economic data.

1.2.5 Environment

Table S1-11 Environmental conditions of Port of Venice.

Sub-categories	Description and assessment
Air	In 2015, SO ₂ emission in the Port of Venice was equal to that in 2010, and both did not exceed the annual limit for protecting the ecosystems; NO ₂ emission alone in 2015 was improved compared with that in 2010 although slightly exceeded the annual limit in the northern. However, NO _x emission seriously exceeded the annual limit of vegetation protection. The averageat concentration of PM ₁₀ in 2010 did not exceed the standard but increased in 2015 and slightly exceeded the standard. The 24-hour limit of PM ₁₀ seriously exceeded the human health protection limit. The average concentration of PM _{2.5} in 2015 also slightly exceeded the standard. Polycyclic aromatic hydrocarbons (PAH) exceeded the annual target value in winter [19,20].
Water	During 2013-2015, the dissolved inorganic nitrogen in the waters near the Port of Venice was slightly over-standard, and the hypoxia/anoxia occurred in summer [21].
Noise	No noise exceeded the standard set by the government[11].
Waste	The waste collection rate in Port of Venice is 50% to 65%, up from 2010 [8,9].
Environmental risk	The sources of environmental risks came from ship oil spills.

1.2.6 Ecology

Table S1-12 Ecologic conditions of Port of Venice.

Sub-categories	Description and assessment
Terrestrial ecosystems	A failure to obtain the data on the terrestrial ecosystem of the Port of Venice.
Aquatic ecosystems	For the waters near the Port of Venice, the M-AMBI (Multivariate Marine Biotic Index) for ecological status of macrobenthic invertebrates is at a medium level, and the BITS (Benthic Index based on Taxonomic Sufficiency) is good; the MaQI (Macrophyte Quality Index) is bad; the MPI (Multimetric Phytoplankton Index) is good, and; the HFBI-Ve (Habitat Fish Bioindicator Index) in the northern waters near the Venetian port is at a medium level, but improved in the southern [21].
Sensitive bio-ecology	The sensitive areas include the Venetian Lagoon itself and its continental coast, and the city has continued to sink in recent years. The sensitive biologies include the unique flora and fauna of the Venetian lagoon, but there is no obvious problem [10].

1.3 Port of Piraeus (Pier II) region

1.3.1 Location

Table S1-13 Local conditions of Port of Piraeus.

Sub-categories	Description and assessment
Geographical	Located at the intersection of Asia, Africa, and Europe, the Port of Piraeus is the first European port to offer transit and land transport services after passing the Suez Canal.
Natural conditions	The container terminal is tide-free and has deep water [22], and there is no freezing there. It is a natural harbor with a water depth of 12-19 m, which is available for the largest modern ship [22].
Ecological conditions	The Port of Piraeus was certified as a Mediterranean Green Port by the European Sea Ports Organisation for the Ecoports program [23]. It is in a good ecological location.
Economic status	The Port of Piraeus is 10 km away from Athens, the capital city of Greece. The container terminal is located at the Free Zone with no value-added tax and tariffs, and it has efficient processes and flexible taxes [22].
Social status	The Port of Piraeus is the largest port in Greece and the only European international transit port in the Eastern Mediterranean. In 2010, it was ranked in the top 100 container ports in the world and ranked 45th in 2015. In 2012, the port won the “Port Social Integration” award from the European Seaport Organization.

1.3.2 Resource

Table S1-14 Resource conditions of Port of Piraeus.

Sub-categories	Description and assessment
Land resource	The total area of the Pier II of the container terminal in Port of Piraeus is 47,500 m ² [23]. This area has limited land resources.
Shoreline resource	The length of the quayside of Pier II is 1,480 m with 780 meters in the east and 700 meters in the west [23].
Water-area resource	The depth of safe water is 14.5 m in the eastern area and 16.5 m in the western area [23].
Traffic resource	The container terminal connects to the European rail transport network with 10 trains per day. The Balkans and Central Europe can be reached by railway [23].
Route resource	The large feeder network of the Port of Piraeus allows container ships to serve all ports near the Mediterranean, the Black Sea and the Adriatic Sea [23].
Tourism resource	Piraeus has a unique landscape of archaeological museums, naval museums, and historical sites, and various cultural entertainment and sporting events were held there [24]. The tourism resource of Athens is rich as well [25].

1.3.3 Society

Table S1-15 Social conditions of Port of Piraeus.

Sub-categories	Description and assessment
Development strategy	The improvement of infrastructure and services of the Port of Piraeus is helpful for its development although high-quality services and long-term employment are important concerns [23]. The social and environmental issues are being tried to resolve [22].
Administrative management	The Pier II is operated by Piraeus Container Terminal S.A., a company that incorporated in Greece and a wholly-owned subsidiary of COSCO Pacific Limited, and the incorporation help reverse losses.
Port benefits	The port was in a loss previously, but after the takeover by COSCO Group, the port cargo throughput in 2015 was 5.97 million tons, an increase of 2.4% over the previous year and the container throughput was 1.78 million tons, an increase of 4.9% [26].
Infrastructure	The Pier II has 4 berths, and the container throughput capacity is 3.2 million TEU [23].
Environmental management	The Port of Piraeus got the certificate of ISO 14001 and environmental audit system [27], and the total cost of environmental protection was 2.2 million euros [28].
Safety production	No major or serious environmental incidents occurred in the Port of Piraeus during 2014-2015, and no complaints about port were received [27].

1.3.4 Economy

Table S1-16 Economic conditions of Port of Piraeus.

Sub-categories	Description and assessment
Economic indicators	In 2015, the total after-tax income of Piraeus Container Terminal S.A. was 0.26 billion euros, an increase of 270% compared with that in 2010 and an average annual growth rate of 54.1%. The pre-tax net profit for 2015 was 0.37 billion euros, an increase of 354% over 2010 and an average annual growth of 70.9% [29].
Fixed asset investment	The total fixed assets of Piraeus Container Terminal S.A. in 2015 was 360 million euros, an increase of 244% over 2010 [29].

1.3.5 Environment

Table S1-17 Environmental conditions of Port of Piraeus.

Sub-categories	Description and assessment
Air	During 2014-2015, only the concentration of PM ₁₀ exceeded the standard limit in the port of Piraeus when ship transportation was busy [27]. The atmospheric environment is of good quality.
Water	The quality of seawater is good and has not changed much in recent years. The concentration of petroleum hydrocarbons in 2015 showed a slightly decrease [27].
Noise	The results of noise monitoring showed conformity with the specified limit values [27].
Waste	In Port of Piraeus, 80.08% of solid waste was an oily waste in the workshop [27]. In 2015, the waste recovery rate was 39.1%, which was increased compared with previous years. The port waste should be managed effectively[27].
Environmental risk	The sources of environmental risks came from ship oil spills and explosion and leakage of dangerous toxic substances [27].

1.3.6 Ecology

Table S1-18 Ecological conditions of Port of Piraeus.

Sub-categories	Description and assessment
Terrestrial ecosystems	The portland landscape configuration concerns the selection of specific plant species based on local conditions and low maintenance requirements to improve the port landscape and its microclimate [27].
Aquatic ecosystems	It is a failure to obtain the relevant data.
Sensitive bio-ecology	There are less sensitive biological species in the Port of Piraeus except some mollusks [30].

1.4 Maritime regions

In this case study, the international shipping route passed through the Pacific Ocean, Indian Ocean, and the Atlantic Ocean. Human activities are limited in such areas, except for some exploitation activities like shipping and fishing. Hence, this section will not assess the location, society, and economy in these separated areas, but integrate some of them into the resource concerns.

1.4.1 Pacific Ocean

Table S1-19 Resources in the Pacific Ocean.

Sub-categories	Description and assessment
Natural resource	The Pacific Ocean has the largest area, the deepest average water depth, and the largest number of marginal seas and islands in all the oceans of the world [31]. The sea surface water temperature is $-1.4^{\circ}\text{C}\sim 30^{\circ}\text{C}$, and routes are rarely affected by freezing [31]. There is a clockwise North Pacific circulation and a counterclockwise South Pacific circulation in the area [31]. Typhoons actively enter the East Pacific and Southeast Asia from the Pacific Northwest from May to December [31]. The Pacific region provides cheap sea transport, abundant fisheries, coastal oil and gas fields, minerals, and sand and gravel required by the construction industry [31].
Routes resource	The Pacific routes can be divided as follows: 1) Starting from Far East and East Asia: the westbound routes to North Indian Ocean, Mediterranean Sea, Northwest Europe route, East Africa, West Africa, and East Coast of South America; the southbound routes to Australia, New Zealand, Pacific Islands, and Southeast Asia; the eastbound routes to West Coast of North American, Caribbean, East Coast of North American, and West Coast of South American; and 2) Starting from Australia and New Zealand: the eastbound routes to East and West Coast of North America, and West Coast of South American; the routes to from East and West Coast of North America to West Coast of South American.

Table S1-20 Environmental status of Pacific Ocean.

Sub-categories	Description and assessment
Air	Due to anthropogenic activities, the concentration of nitrogen has probably been increased at least by a factor of 3 over the last ~150 years [32]. In the South China Sea, the surface water temperature has increased rapidly [33] and the atmospheric nitrogen deposition concentration is large [32].
Water	The overall environmental quality of the open ocean is good, but the dissolved oxygen concentration and the pH value in the surface ocean are decreasing [34]; In the 20th century, the sea level is rising at an average rate of 1.7 mm per year [34]. In the South China Sea (near Hong Kong area), the concentration of PCBs (polychlorinated biphenyls) is relatively high. The concentration of DDT (dichlorodiphenyltrichloroethane) near Hong Kong and northern Vietnam is also relatively high [34]. In the South China Sea and the East China Sea, the nutrient concentrations are relatively high [34]. The water quality in most areas of the east coast of Malaysia is at a medium level [34].
Noise and waste	The data of interest is insufficient, but there are no obvious environmental problems [35].
Environment	The sources of environmental risks came from ship oil spills and marine garbage [34].

risk	
Table S1-21 Ecological conditions of Pacific Ocean.	
Sub-categories	Description and assessment
Aquatic ecosystems	The Pacific Ocean has the world's largest low-oxygen waters and low marine species abundancy. The fish resources in the Central and Western Pacific Ocean are full- or overexploited [34]. Overall, the ecological quality of the open ocean in the Pacific Ocean is good [34]. In the South China Sea, the quality of the coral reef ecosystem is at a normal level [33].
Sensitive bio-ecology	The Pacific Ocean has a large number of endemic species, including more than 400 endemic birds and approximately 30% of native plant species [31]. Most endemic species in the Pacific are the most endangered species in the world, including 25% of the world's threatened birds, and the endangered and threatened species include tuna, whales, sea turtles, dugongs, dolphins, porpoises, and saltwater crocodiles [31].
Ecological risk	The sources of ecological risks came from biological invasion, ship oil spills and marine garbage [31].

1.4.2 Indian Ocean

Table S1-22 Resource conditions of the Indian Ocean.

Sub-categories	Description and assessment
Natural resource	As the world's third-largest ocean, the India Ocean accounts for about 20% of the global water surface and has a coastline of 6.65×10^4 km and six marginal seas [36,37]. The surface water temperature is from 22 °C to > 28 °C [36]. The Indian Ocean is rich in fisheries, oil, natural gas, and mineral resources, but the Indian Ocean tsunami has become one of the top 10 natural disasters in the world and is affected by tropical cyclones [36,37].
Routes resource	The Indian routes can be divided as follows: 1) Starting from the Middle East Gulf: the eastbound route to the Far East and the westbound route to European and East Coast of North American; and 2) Starting from South Africa: the eastbound routes to the Far East, Australia, and New Zealand. 3) the westbound trunk routes to the Far East and Australia [37].

Table S1-23 Environmental conditions of the Indian Ocean.

Sub-categories	Description and assessment
Air	The open ocean of the Indian Ocean has a good atmospheric environment, but CO ₂ and nitrogen concentrations are rising rapidly [32]. The atmospheric nitrogen deposition in the Straits of Malacca is relatively high [32].
Water	The water quality of the open ocean in the Indian Ocean is good, but the dissolved oxygen concentration and the pH value in the surface ocean are decreasing [34]. In the 20th century, the sea level is rising at a rate of 1.7 mm per year [34]. The nutrient concentration in the Bengal Bay is high, and harmful algal blooms often occur. Algae bloom in the Andaman Sea has been improved in recent years [38].
Noise and waste	The relevant data is insufficient, but there are no obvious environmental problems [33-35].
Environmental risk	The sources of environmental risks came from natural disasters like tsunami and tropical cyclones, ship oil spills, and marine garbage [34].

Table S1-24 Ecological conditions of Indian Ocean.

Sub-categories	Description and assessment
Aquatic ecosystems	The ecological quality of the open ocean is good [34]. Overfishing happened in the Bengal Bay and the Andaman Sea, and the biodiversity of the Red Sea and the Oman Sea is relatively high [38]. The quality of the Red Sea coral reef ecosystem is good, but generally in the Bengal Bay and the Arabian Sea and that in the Gulf of Thailand is poor [33].
Sensitive bio-ecology	Sensitive biological ecosystems in the Indian Ocean include coral reefs, whales, dolphins, coelacanths, dugongs, and sea turtles, and there are 12 marine reserves in the Red Sea and Gulf of Aden [35].
Ecological risk	Similar to the Pacific Ocean, the sources of ecological risks in this area came from biological invasion, ship oil spills, and marine garbage.

1.4.3 Atlantic Ocean

Table S1-25 Resource in the Atlantic Ocean.

Sub-categories	Description and assessment
Natural resource	As the world's second-largest ocean, the Atlantic Ocean accounts for about 29% of the global water surface and has a coastline of 11.18×10^4 km and 20 marginal seas [37,39]. The surface water temperature varies from -2 °C to > 30 °C [39]. The Atlantic Ocean is rich in mineral resources and aquatic resources, but there are icebergs in the Northwest Atlantic from February to August, fog from May to September, and hurricanes from May to December each year [37,39].
Routes resource	The Atlantic routes can be divided as follows: 1) Starting from Northwestern Europe and Europe: the westbound routes to East Coast of North American and Caribbean; the southbound routes to the Mediterranean, Middle East, Far East, Australia, New Zealand, East Coast of South American, West Africa; and 2) Starting from the east coast of North America: the eastbound routes to the Mediterranean, Middle East, Asia Pacific, and Cape of Good Hope; the southbound routes to the Caribbean and East Coast of South American [37].

Table S1-26 Environmental status of Atlantic Ocean.

Sub-categories	Description and assessment
Air	The environment quality of the open ocean is good, but CO ₂ and nitrogen are growing rapidly[32]. The surface temperature of the North Sea, the Baltic Sea, and the Iberian Sea is also rising rapidly [34].
Water	The water quality of the open ocean is good, but the dissolved oxygen and pH values in the surface ocean are decreasing [34]. In the 20th century, the sea level is rising at an average rate of 1.7 mm per year [34]. The organic chlorine in the Celtic Sea, the northern Mediterranean, the North Sea, and the Iberian Sea are at a higher level, as well as the nutrient elements in the Celtic Sea and the North Sea [33].
Environmental risk	The sources of environmental risks came from ship oil spills and marine garbage.

Table S1-27 Ecological conditions of Atlantic Ocean.

Sub-categories	Description and assessment
Aquatic ecosystems	The open ocean has good ecological quality, but biodiversity is not optimistic [34]. Most of the unique species of the Mediterranean are on the verge of extinction [35]. The frequency of toxic blooms increased [38].
Sensitive bio-ecology	The marine protected area of the Baltic Sea areas accounted for 10.3% in 2010 and still growing [38]. The number of breeding birds in the North Atlantic is decreasing, and migratory species in the North Sea have become rare species [38].
Ecological risk	The sources of ecological risks in this area came from biological invasion, ship oil spills, and marine garbage.

1.5 Port of Xiamen region

1.5.1 Location

Table S1-28 Location setting of Port of Xiamen.

Sub-categories	Description and assessment
Geographical	Located in the southeast of China and on the west coast of the Taiwan Strait, the Port of Xiamen is an important hub of China's comprehensive transportation system and a cargo distribution center in southeastern Fujian and even the entire Fujian Province. The port situates within the free trade pilot zone along the Maritime Silk Road. Under siege by the Yangtze River Delta, the Pearl River Delta and Taiwan's port group, there is no advantage in considering the geographical location, but it has obvious geographical advantages for Fujian province, southern Anhui, and eastern Guangdong.
Natural conditions	The Port of Xiamen is a natural deepwater harbor with ice-free, few frog and low sedimentation condition and can be considered as an excellent shelter although the deepwater shoreline resources and land resources are limited [40].
Ecological conditions	In 2015, Xiamen City was awarded as "Green Transportation City" by the Ministry of Transport of the People's Republic of China, and it is in good ecological location [40].
Economic status	The Port of Xiamen takes the golden triangle of southern Fujian as its core hinterland and serves the Fujian province, southern Anhui and eastern Guangdong, but their economic aggregate is smaller than that of some cities in the Yangtze River Delta and the Pearl River Delta.
Social status	This port is China's container trunk port and the largest and most promising port in Fujian Province. In 2015, according to the China Coastal Container Port Comprehensive Service Evaluation Index, the Port of Xiamen was ranked the sixth, and the container throughput of Port of Xiamen was ranked the 17th in the world and the 7th in the country [41].

1.5.2 Resource

Table S1-29 Resource conditions of Port of Xiamen.

Sub-categories	Description and assessment
Land resource	The land area of Xiamen Harbor is 45.76 million m ² and it is limited [42].
Shoreline resource	The planned coastline of Xiamen harbor is about 52.95 km, of which 13.09 km is along the Haicang Port Area. The limited shoreline limits the supply of shoreline resources, especially deep-water shoreline resources [40].
Water-area resource	Xiamen Bay is an excellent deep-water harbor, and the navigation depth guarantee rate reached 95%, down by 5% from 2010 [41].
Transport resource	This port locates at the intersection of national trunk roads and national key trunk lines [42]. The Yingxia Railway acts as the mainline and the Meikan Railway helps communicate with the East Guangdong province, and the Fuzhou-Xiamen Railway, Longxia Railway, Xiamen-Shenzhen and Xiaolong Capacity-Enhancing Project help communicate with the West Coast Economic Zone and the surrounding areas [42].
Route resource	The weekly voyages were increased from 26 classes in 2010 to 202 classes in 2015, and the total number of “Maritime Silk Road” routes reached 41 [41,43].
Tourism resources	The Xiamen Bay has rich tourism resources including cruise tourism[40]. This is one of the top four international cruise homeports in China for mooring the international luxury cruise ships.

1.5.3 Society

Table S1-30 Social status of Port of Xiamen.

Sub-categories	Description and assessment
Development strategy	The development of Port of Xiamen has been integrated into the initiative of “Maritime Silk Road” and the establishment of a free trade zone. The construction of transition port in inland, so-called “dry port”, for the International Shipping Center in Hunan and Jiangxi has been proposed [44].
Administrative management	The law-based administration, credit publicity, optimization and simplification of administrative examination and approval and implementation of “multi-regulation” have been improved [41]. In 2015, the Comprehensive Administrative Law Enforcement Detachment was established [41].
Port benefits	The cargo throughput annually increased by an average of 13.0%, and the container throughput increased by an average of 11.5% [43,45]. The ranking of container throughput in the world increased to 16 in 2015 from 19 in 2010 [43,45]. This shows an obvious port benefits.
Infrastructure	In 2015, the number of berths increased by 55 compared with that in 2010, as well as 61 million tons of comprehensive cargo passing capacity and 3.94 million TEU of container passing capacity [43,45].
Operation efficiency	In 2015, the average staying time in the port for foreign trade container ships was 0.5 days, 0.11 days shorter than that in 2010 [43,45]. This shows a significant efficiency improvement of the port operation and management.
Environment management	During 2010-2015, several environmental management efforts were made, including the report on “Energy Saving and Emission Reduction Planning and Assessment Index System for Xiamen Port” and “Beautiful Harbor Strategic Planning Outline” [40]. Based on the Standard for Green Port Grade Evaluation (JTST105-4-2013), the Port of Xiamen received a score of 89 out of 100 for the evaluation and was in the front in China [46].
Safety production	In 2015, the number of provincial compliance assessments of the safety production standardization for 114 port and shipping enterprises reached 79.6%; the number of rectification projects for safety hazards was 1315, and the rectification rate reached 99.6% [41].

1.5.4 Economy

Table S1-31 Economic status of Port of Xiamen.

Sub-categories	Description and assessment
Economic indicator	There is no any statistical data for the port operations. Taking an important port company as an example, the Xiamen Port Development Co., Ltd.’s operating income in 2015 increased by 5.7 billion yuan compared with 2010, and the profit increased by 7.6% [47].
Fixed asset investment	In 2015, the fixed assets investment of Xiamen Port was 2.07 billion yuan, a decrease of 1.29 billion yuan compared with 2010 [43,45]. The first fourth-generation automated terminal in China was put into operation in the Port of Xiamen.

1.5.5 Environment

Table S1-32 Environmental conditions of Port of Xiamen.

Sub-categories	Description and assessment
Air	In 2010, the SO ₂ emission in Haicang Port Area and its surrounding areas did not exceed the standard. , except the daily average concentration of NO ₂ exceeded the standard slightly [48]. The daily average concentration of PM ₁₀ exceeded the standard slightly [48]. In general, the ambient air quality in and around the Haicang Port Area is good. Additionally, the total amount of carbon emissions increased and then decreased, and the intensity of carbon emissions showed a downward trend, with an average annual decline rate of 10.8% [48].
Water	In 2013, the over-standard rate of inorganic nitrogen and active phosphate in the west and south of Xiamen Bay and the estuary area was above 80%, and others did not exceed the standard [48]. The water quality is good in general.
Noise	The acoustic environment quality of most monitoring sites in Haicang Port Area didn't exceed the standard, except that in entrance and exit [48].
Waste	Domestic garbage in the port area can be effectively treated; ship garbage can be comprehensively disposed after inspection; most of the machine repair solid waste can be comprehensively utilized [48].
Environmental risk	The sources of environmental risks came from ship oil spills and leakage of dangerous toxic substances, but low probability of risk and economic loss [48].

1.5.6 Ecology

Table S1-33 Ecological conditions of Port of Xiamen.

Sub-categories	Description and assessment
Terrestrial ecosystems	The vegetation coverage of the hills behind the Songyu operation area in the Haicang Port Area is high. This port area is dominated by the bedrock corner [48]. There are no rare and protected plants in the land area and rear of the port area [48].
Aquatic ecosystems	In 2013, the biodiversity of phytoplankton in the west and south of Xiamen Bay and the estuary were low. The species diversity and uniformity of zooplankton decreased, but the average value of total individual density increased significantly. Benthic biomass and its biodiversity decreased significantly, but the average density increased significantly, and; the number, type, and density of fish eggs and larvae decreased [48].
Sensitive bio-ecology	The sensitive biological issues around the port area include Chinese White Dolphin in national nature reserves, the Mangrove Provincial Nature Reserve in Jiulong River Estuary, the Jiulong River Estuary Wetland of County Nature Reserve, and the Gulangyu-Wanshishan National Scenic Area. They are all in good condition [48].
Ecological risk	The ecological risks came from biodiversity decrease and invasive species. The risk probability and economic loss are relatively low [48].

1.6 Xiamen region

1.6.1 Location

Table S1-34 Location setting of Xiamen.

Sub-categories	Description and assessment
Geographical	Situated within the golden triangle of southern Fujian, the Xiamen city faces Taiwan and has a certain geographical advantage in the southeast of China.
Natural conditions	Xiamen has a subtropical maritime monsoon climate, and the mild climate throughout the year, which provides a good natural location. Xiamen has rich port and tourism resources, but limited land and fresh water resources [40].
Ecological conditions	Xiamen is considered as the “National Forest City”, “Green Transportation City”, and “National Garden City”. Its ecological location is good.
Economic status	Due to the small economic volume, the economic location of Xiamen is under pressure from the Yangtze River Delta, the Pearl River Delta and Taiwan, but has certain advantages in south China. The economic rank is moderately high.
Social status	Xiamen is a special economic zone and the core city in the west coast of the Taiwan Strait. Located at the Fujian Free Trade Zone, it is an important hub along the Maritime Silk Road. It is also known as a “Civilized City” in China. Hence, the social location of Xiamen is good.

1.6. 2 Resource

Table S1-35 Resource conditions of Xiamen.

Sub-categories	Description and assessment
Natural resource	Xiamen has rich tourism resources and port resources, but limited land resources, freshwater resources, and energy resources [40]. The coastal coastlines are twisted and embayed [49]. No aquaculture in Xiamen Bay [40]. The shipping and tourism compete for marine space resources that cause serious conflicts in resource utilization but have eased in recent years [40].
Humanistic resource	Motivated by a large number of Chinese, especially those in Taiwan and Southeast Asia, the blending of the traditional culture of southern Fujian and Western culture shapes a competitive cultural resource for cruise shipping in Xiamen [49]. The humanistic resource condition is good.

1.6.3 Society

Table S1-36 Social status of Xiamen.

Sub-categories	Description and assessment
Political civilization	For the second consecutive year, Xiamen has been ranked the fourth in the national assessment of 100 cities with law-based governments and maintained the first position of administration by law in the provincial assessment of governments' performances [50]. This city commits to become a pilot of low carbon city and marine ecological civilization city [50]. Administrative efficiency, citizen quality, and urban civilization have been continuously improved [50]. In a word, the political civilization of Xiamen is at a good level.
Family and household	The resident population of Xiamen increased by an annual average of 1.7%; the per capita disposable income of urban residents and the annual income of rural residents increased by an average of 9.12% and 15%, respectively; the growth rate of total retail sales of social consumer goods was greater than 8.9%; the consumer price index was around 102%, and; the urban registered unemployment rate in 2015 was 3.22%, a decrease of 0.11% from 2010 [50]. The endowment insurance level is at the forefront of the country [50].
Culture and art	Being a famous hometown of overseas Chinese, the exchanges between traditional culture in Southern Fujian and Western culture and Southeast Asia culture were active, and the cultural exchanges between Xiamen and Taiwan were in-depth [51].
Infrastructure	The infrastructure of port, railway, highway, and aviation were developed, and Xiamen became a pilot city for innovation and development of logistics in China [50].
Administrative management	The governments commit to advance convenience in trade through setting up single windows for customs procedures and establishing a “one-stop service” for inspection [50].
Environmental management	Xiamen's total production value of electricity consumption and water consumption has maintained a leading level in large and medium-sized cities in China with a decrease of 4.5% and 3.6% in 2015, respectively [50]. In 2015, it ranked first in the assessment of the mayor's responsibility for environmental protection [50]. The total investment of environmental pollution control in 2010-2015 averaged 1.45% of GDP [50].
Medical and health	In 2015, there were 1437 health institutions in the city, including 45 hospitals, which increased by 46.8% and 25% respectively compared with 2010. The number of beds in health institutions reached 14,000, an increase of 32.9% compared with 2010, and the bed utilization rate was greater than 86%. The incidence of infectious diseases of Classes A and B legal reports decreased significantly in 2011 [50].
Education and technology	During 2010 to 2015, the average annual increase in education expenditure was 8.1% and the average internal and external expenditure on research and development funds increased by 20.6%. The number of domestic patent grants increased by 48% in 2015 compared to that in 2010 [50].

1.6.4 Economy

Table S1-37 Economic status of Xiamen.

Sub-categories	Description and assessment
Economic power	The average annual GDP growth rate is 13.64%, but the total amount is trivial [50]. The economic amount ranked the third in Fujian province, while the per capita GDP and the per capita disposable income of urban residents ranked the first.
Industrial structure	Between 2010 and 2015, the first, second and third industry structures were 1.12:49.73:49.15 and 0.7:43.6:55.7, respectively [50].
Fixed asset investment	In 2015, the fixed asset investment of the whole society increased by 87.8% compared with in 2010, among which the investment in urban transportation and warehousing industry nearly doubled, and the investment in ecological protection and environmental protection industry increased substantially [50].
Trade and logistics	During 2010-2015, the growth rate of freight volume had been higher than 13%; the growth rate of container throughput had exceeded 11% in the first four years and more than 7% in the last two years; the total volume of foreign trade imports and exports had been decreased in 2015, but the growth rate was still in first compared to other cities in eastern China, and; the value-added of logistics increased by 16.5% in 2015 over the previous year, accounting for 9.0% of GDP [50].
Finance and taxation	The average annual growth rate of total fiscal revenue was 18.1%, and 22.4% for the fiscal expenditure [50]. The local fiscal revenue was the first in Fujian province [50].
Monetary and insurance	The balance of deposits of Chinese-funded financial institutions has increased year by year; the growth rate of loan balances has remained above 10% [50]. At the end of 2015, the total assets of the banking industry increased by 21.4% compared with the beginning of the year, and the total liabilities increased by 21.0% [50].

1.6.7 Environment

Table S1-38 Environmental conditions of Xiamen.

Sub-categories	Description and assessment
Air	During 2010-2015, the air quality met the standard for more than 340 days per year, and the excellent rate remained above 93% [52]. The air quality in 2015 was the second among 74 cities in the country [52]. The main air pollutants were PM _{2.5} and NO ₂ [52].
Water	During 2010-2015, the sewage discharge in Xiamen increased year by year, reaching 289 million cubic meters in 2015, increased by 70 million cubic meters compared with 2010, and the centralized sewage treatment rate was over 90% [50]. After 2011, the water quality compliance rate of drinking water sources has been 100%; the seawater environment quality in Xiamen Bay is good without significant change, and the main over-standard factors are nutrient salt, and; the water quality compliance rate of estuary area is below 70% [52]. The water quality is good in general.
Noise	In 2015, the average equivalent sound level of road traffic was 67.9 dB(A), lower than that in 2010 [52]. The noise quality of urban functional areas was generally good in 2015, and the compliance rates at day and night were 95.0% and 70.0%, respectively [52].
Waste	In 2015, the utilization rate of general industrial solid waste disposal was 99.53%; the harmless treatment rate of domestic waste increased to 100%, and; the amount of domestic garbage removal has increased year by year, and in 2015, it increased by 0.68 tons compared with 2010 [52].
Environmental risk	The environmental risk level is medium, and the risk sources mainly come from meteorological disasters (e.g. heavy rain, typhoon, storm surge), ship oil spills, red tides, and biological invasions [53].

1.6.8 Ecology

Table S1-39 Ecological conditions of Xiamen.

Sub-categories	Description and assessment
Terrestrial ecosystems	In 2015, the ratio of green area in Xiamen City was 37.2%, and the green coverage rate was 41.9%, 1.5% more than that in 2010, and; the per capita green area of the park was 11.46 m ² , decreased by 8.89 m ² compared to 2010 [54].
Aquatic ecosystems	The species diversity in waters around Gulangyu and Haicang Port Area is low; the number of benthic species in shallow seas decreased significantly, and the wetland area is significantly reduced [55].
Sensitive bio-ecology	Sensitive areas include the Xiamen Ocean Rare Species National Nature Reserve, Gulangyu-Wanshishan National Key Scenic Area, and Provincial Nature Reserve for Mangrove in Jiulong River Estuary [52]. The communities of Chinese White Dolphins and Egrets are stable and the mangrove in Jiulong Estuary was well protected, but the Lancelet and Chinese Carp significantly reduced [52].
Ecological risk	The ecological risk level is moderate and mainly come from meteorological disasters, ship oil spills, red tides, and biological invasions [56].

Supplementary II Results of the assessment of “door-to-door” international shipping

2.1 Vine planting

The grapes are organic and environmentally friendly and have been certificated by the CCPB standards [57].

2.2 Wines production

Table S2-1 Assessment of wine production.

Dimensions		Description and assessment
Location	No impacts.	
Resource	All energy consumed by the wine production is renewable, and each bottle of wine consumes 1.05×10^6 J of renewable energy and 1.21 L of water according to the 2015 Yearly Report [58], and it is in the world advanced level compared to the Cleaner production standard-Wine industry (HJ452-2008).	
Society	An investigation indicated that, in this case, high wages helped employees, and the training on quality-safety-environment management system lasted up to 3,179 hours in 2015 [58]. Additionally, the CIELO has been certificated by BS OHSAS 18001, ISO 9001, and ISO 14001 [58].	
Economy	CIELO's wine production maintained long-term profitability and financial stability [58]. In 2015, the profitability of CIELO company, as indicated by the operating result to net equity ratio, was 29%, and the operating efficiency as indicated by the operating result to netrevenue ratio was 6%. The leva finanziaria, which is a ratio of outside funding to net income, was 3 in 2015 [58].	
Environment	In 2015, emissions have been reduced by 10% of CO _{2e} (carbon dioxide equivalent) in CIELO [58]. The CO _{2e} emission of each bottle of wine is calculated as 0.41kg, significantly less than the world's advanced level of 1.28 kg [59]. It can be estimated that the wine production of the container has a total discharge of 7,318.5 kg of CO _{2e} .	
Ecology	Lighter bottles were used to reduce glass for ecological concerns [58].	

2.3 Storage in the CIELO's factory

The finished products were packed in cartons in the CIELO warehouse that did not impact the regional environments but occupied the land resource. The manager of TAILA described that the warehousing in CIELO is in very good order and cleaning.

2.4 Road transportation from CIELO to Port of Venice

Table S2-2 Assessment of road transportation in Veneto.

Dimensions	Description and assessment
Location	No impacts.
Resource	In this case, by using the tool of EcoTransIT World, we can estimate that the energy consumption of road transportation is 1,019 MJ (Mega Joule) for the heavy container from CIELO to Port of Venice and 415 MJ for the empty container transportation if the weight is 26-40 t and emission standard is Euro VI, and the average fuel consumption is 0.63 L/km (diesel equivalents) [60].
Society	Although the employment opportunities are provided, Italian truck drivers face problems of pay-cuts and poor working conditions [61].
Economy	Through investigation, road transportation cost was less than 5,000 yuan (RMB).
Environment	The transportation emissions of 0.072 t CO _{2e} Greenhouse gases, 0.071 t CO ₂ , 0.021 kg NO _x , 0.00048 kg SO _x , and 0.00029 kg PM for the heavy container, and 0.0294t CO _{2e} Greenhouse gases, 0.0289t CO ₂ , 0.010 kg NO _x , 0.00019 kg SO _x , and 0.00013 kg PM for the empty container were also received [60].
Ecology	According to Google Maps, the truck went through a mountain tunnel to avoid interference with protected areas.

2.5 Operations in Port of Venice

Table S2-3 Assessment of Port of Venice operations.

Dimensions	Description and assessment
Location	No impacts.
Resource	This container took 6 days to dwell time in the yard of Venice's Port and the ship occupied the shoreline about a half-day. Comparing with the Port of Tanjung Pelepas, it has an average dwell time of 4.125 days for the export yard and an average terminal berth turnaround time of 20.8 hours in 2016 [62].
Society	It is conducive to the port employment.
Economy	The loading or discharging of the 40' container costs 160 euros [14], which is more than double the charge in Port of Tanjung Pelepas [63].
Environment	It is a failure to access the related data, but it can be found that the container ship ASIATIC MOON, built-in 2006, is old, and environmental risks cannot be ignored.
Ecology	The port activities also challenge the delicate Venetian Lagoon [11].

2.6 Operations in Port of Piraeus

Table S2-4 Assessment of Port of Piraeus operations.

Dimensions	Description and assessment
Location	No impacts.
Resource	It took 8 days to dwell time of the container in the Port of Piraeus and less than one day for the ship occupying the shoreline.
Society	It is conducive to the port employment.
Economy	The loading costs for import and export are 117.8 euros and 90 euros, respectively [64], higher than the Port of Tanjung Pelepas [63].
Environment	It is a failure to access the related data. According to the Piraeus Port Authority S.A.'s environmental report, the current environmental condition is good [27], but the old ship of ASIATIC MOON brought a certain environmental risk.
Ecology	A survey indicates that the ecological condition of Port of Piraeus has low sensitivity.

2.7 Maritime transportation

Table S2-5 Assessment of maritime transportation.

Dimensions	Description and assessment
Resource	Based on the European Standard EN 16258, Clean Cargo Working Group Carbon Emissions Accounting Methodology, and Guidelines for voluntary use of the Ship Energy Efficiency Operational Indicator (EEOI), the EEOI of ASIATIC MOON is $528 \text{ gCO}_2 / \text{TEU} \cdot \text{n mile}$, and $247 \text{ gCO}_2 / \text{TEU} \cdot \text{n mile}$ for YM WELLHEAD [65]. Both are lower than the general level of CO_2 emission efficiency of container ships ($12.5\text{-}37.5 \text{ g/t} \cdot \text{km}$) [66].
Environment	According to the carbon calculator provided by the Mediterranean Shipping Company, the CO_2 emissions of the 21.409 tons average goods from Port of Venice to Port of Piraeus via sea ship is 0.54 t, and 2.07 t CO_2 emissions for the transportation from Port of Piraeus to Port of Xiamen [65].
Ecology	The sources of ecological risks came from a ship oil spill and biological invasion.

2.8 Operations in Port of Xiamen

Table S2-6 Assessment of Port of Xiamen operations.

Dimensions	Description and assessment
Location	No impacts.
Resource	It took 14 days of the container in dwell time in the Port of Xiamen and less than half a day for the ship occupying the shoreline. The Port of Xiamen's average energy consumption of 4,923 gce (gram coal equivalent) for a container handling is at a medium level in Chinese coastal ports [40].
Society	It is conducive to the port employment.
Economy	The container loading and unloading cost 638.30 yuan (RMB), slightly higher than the Port of Tanjung Pelepas [63], but lower than tha in Port of Venice and Port of Piraeus.
Environment	The emissions of carbon dioxide and sulfur dioxide per container approximately reached 4.63 kg and 0.026 kg, respectively, in 2014, on the basis of an unpublished "The 13th Five-Year Plan of Green Port Construction for Port of Xiamen Project Report" (2016), which are markedly higher than those of Port of Long Beach, USA [67]. The noise level at the port area's was somewhat high, and the sources of environmental risks came from oil spills [40].
Ecology	Attention should be paid to the sensitive areas and ecological risks from ship oil spills and species invasion [40].

2.9 Road transportation from Port of Xiamen to TAILA

Table S2-7 Assessment of road transportation in Xiamen.

Dimensions	Description and assessment
Location	No impacts.
Resource	The truck driver gave us the average fuel consumption of 0.59 l/km, which is less than those of the truck transportation in Veneto.
Society	It is conducive to creating jobs, but the working condition is not good.
Economy	The road transportation costs 800 yuan.
Environment	The emission intensity of NO ₂ and CO for this truck can be calculated to be 2.45 g/t·km and 9.39 g/t·km, respectively, much lower than the requirements of EIA Guidelines for Highways in China, the emission factors of NO ₂ and CO for a truck are 12.5 g/km and 48.0 g/km, respectively [68].
Ecology	No impacts.

2.10 Storage in the TAILA's warehouse

Boxes of wines are classified and placed in the warehouse of TAILA, and this would not impact the regional environments but occupied the land resource.

2.11 Sale, use and disposal of wines

The glass wine bottles have not been recycled although they should be. In China, only 10% of the glass is recycled, but 28% in America [69] and 63% as the average recovery rate in developed countries in Europe [70].

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