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**“China’s Fishing Industry:
Current Status, Government Policies, and Future Prospects”**

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by

Zhang Hongzhou*

1. Introduction

Driven by rapidly rising demand for fishery products and supported by government policies, China’s fishing industry has expanded dramatically over the past three decades. China is now by far the biggest producer of fishery products. In 2013, China’s total fishery production reached 61.7 million tonnes, representing over one-third of the world’s total fishery production. China’s gigantic fishing industry is supported by the largest fishing fleet in the world, with nearly 200,000 marine (sea-going) fishing vessels and 2,460 distant-water (i.e., high seas beyond China’s EEZ) fishing vessels in 2014. Apart from being the biggest fishery producer,¹ China has also been being the world’s leading

*Zhang Hongzhou is an Associate Research Fellow with the China Programme at the S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University, Singapore. His main research interests include China and regional resources security (food, water and energy), agricultural and rural development; China’s fishing policies and maritime security.

¹ This includes fishery products of both capture fishery and aquaculture.

exporter of fishery products since 2002. In 2013, China enjoyed USD 11.6 billion surplus from its external fishery trade.²

China's fishing industry, however, has increasingly become the victim of its own success. On one hand, the phenomenal growth in the fishing industry has been largely attributed to overutilization of the country's limited fishery resources. On the other hand, overfishing—compounded by pollution (due to industrialization), land reclamation, and expansion of aquaculture—has resulted in a rapid depletion of fish stocks in China's domestic waters, which poses a dire threat to the sustainability of its marine fishery sector. Faced with declining fish stocks, Chinese fishermen have ventured out into the country's offshore waters, including disputed waters in the East and South China Seas, as well as other countries' EEZs and the high seas, to catch fish. This brings huge challenges not only to the marine fishery sector but also to regional and global maritime security especially in China's near seas.

It is, thus, the aim of this paper to provide a comprehensive overview of the current status of China's fishing industry, and of the related government policies, and to offer some insights on its future trends. Toward this purpose, this paper is organized as follows. Section 2 provides an overview of the development of China's fishing industry, with a focus on the marine fishery sector. Section 3 analyses two major structural shifts in China's fishing industry and its impacts on regional and global maritime security. Section 4 discusses the government's fishing policies that are largely responsible for these structural shifts. Section 5 highlights a few key aspects affecting the future trends of the development of China's fishing industry. Finally, section 6 presents concluding observations.

2. Overview of China's Fishing Industry

China has the largest fishing industry in the world. In 2012, its fishery production accounted for over one-third of global production. Included in this amount is China's vast

² *China Fisheries Yearbook 2014* (China Fishery Yearbook Publishing House, 2014), pp. 7-15.

aquaculture industry, which represented over 60 percent of the global aquaculture production.³ In terms of its catch of live fish from the ocean, China is also by far the leading producer in the world. As shown in Table 1, in 2012 China caught over 17 percent of the global total. It is also the largest fishery trader in the world. As shown in Table 2, in 2013 its fishery export reached nearly USD 20 billion, while imported fishery products were worth USD 8 billion.

Table 1. Major Marine Catch Producers in the World, 2012

Rank	Country	Production (millions of tonnes)	% of the world
1	China	13.9	17.40
2	Indonesia	5.4	6.80
3	United States	5.1	6.41
4	Peru	4.8	6.03
5	Russian	4.1	5.10
6	Japan	3.6	4.53
7	India	3.4	4.27
8	Chile	2.6	3.23
9	Vietnam	2.4	3.03
10	Myanmar	2.3	2.93
11	Norway	2.1	2.70
12	Philippines	2.1	2.67
13	South Korea	1.7	2.08
14	Thailand	1.6	2.02
15	Malaysia	1.5	1.85

³ Food and Agriculture Organization of the United Nations, *The State of World Fisheries and Aquaculture: Opportunities and Challenges* (Rome: FAO, 2014).

Source: FAO 2014.

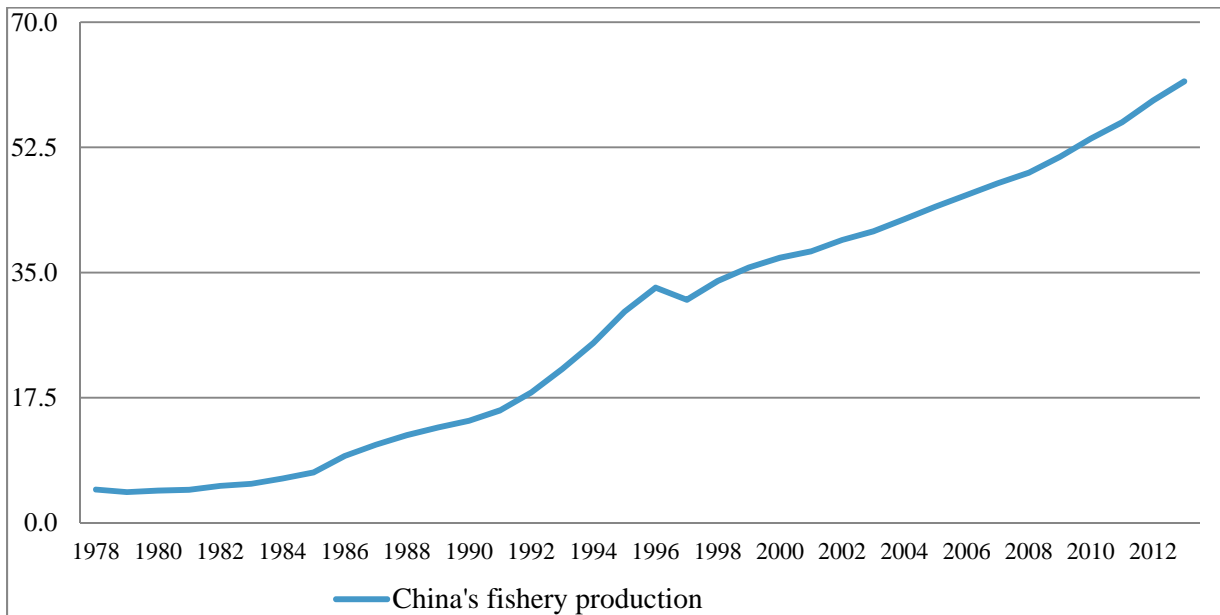
Table 2. International Fishery Trade, 2013

Top 3 Exporters, 2013 (in USD billions)		Top 3 Importers, 2013 (in USD billions)	
China	19.6	USA	19.0
Norway	10.4	Japan	15.3
Thailand	7.0	China	8.0

Source: FAO, 2015.

In the past 35 years, since the Reform and Opening Up in 1978, China’s fishing sector has experienced phenomenal growth. As Figure 1 shows, from 1978 to 2013, its annual fishery production increased by more than 13 times—from 4.7 million tonnes to 61.7 million tonnes—with a remarkable growth rate of 7.6 percent per annum.

Figure 1. China’s Annual Fishery Production (millions of tonnes)



Source: *China Fisheries Yearbook 2014*.

The total value of China's fishing industry reached RMB 1.9 trillion in 2013, which was more than 850 times higher than that of 1979 (RMB 2 billion). The annual value added of the fishing industry was RMB 675 billion in 2013. The share of the fishing industry in China's agriculture increased from 1.6 percent in 1978 to more than 22 percent in 2013.⁴ Fishery products play an important role in China's international trade as well. China has been the biggest exporter of fishery products in the world since 2002. In 2013, China exported nearly 4 million tonnes of fishery products, with a total value of roughly USD 20 billion, making fishery products China's top agricultural export..

Over the past three decades, the number of people who work in China's fishing industry has increased by more than 10 million. The sector employed 14.4 million people in 2013 (Table 3). Among them, slightly over 7.1 million are traditional fishermen. Rapid development of China's fishing industry has greatly enriched the lives of the fishermen. Based on official statistics, net annual income of the fishermen increased from RMB 93 in 1978 to more than RMB 13,000 in 2013,⁵ which was significantly higher than the annual income of the farmers in 2013 (around RMB 8,900).⁶ This income difference continues to attract more peasant workers from the China's inland provinces to join the fishing industry. In short, China's fishing industry is of critical importance to national food security, local economic development, and fishermen's income growth.

Table 3. Fishing Workforce and Fishing Fleet

Number	1979	2013
Motorized fishing vessels	52, 225	694, 905
People in fishing workforce	2.65 million	14.43 million

Source: *China Fisheries Yearbooks 1979 and 2014*.

⁴ *China Fisheries Yearbook 2014*.

⁵ Refer to *People's Daily* at <http://english.people.com.cn/90778/7691714.html>.

⁶ *China's Finance and Economic News, 2011*, available at http://www.cfen.com.cn/web/cjb/2011-12/29/content_828558.htm.

In 1979, China had about 52,225 motorized ships⁷ with a total tonnage of 1.4 million; most were small and old vessels. By 2013, China had 694,905 motorized vessels associated with the fishing industry in one way or another. Of the motorized fishing vessels, nearly 200,000 are marine (sea-going) fishing vessels and 2,460 are distant-water fishing vessels—both are the largest in the world.⁸

China is not only the biggest fishery producer, but also the largest fish processor. In 1979, it had only 52 fishing processing companies,⁹ which employed 15,229 people and had an annual processing output of less than 0.7 million tonnes. At the end of 2013, China had 9,774 fishing processing companies, with annual production of 19 million tonnes, processing locally produced as well as imported fishery products for local sale and export. Around 400,000 people, many young women, are estimated to work in China's fish-processing sector, which is concentrated around Qingdao in Shandong Province, around Dalian in Liaoning Province, and in Fujian Province.¹⁰

3. Structural Changes in China's Fishing Industry and Its Impacts

Beneath the phenomenal expansion of the overall production of China's fishing industry are two major structural changes. One is the remarkable shift of the fishery production structure from catch dominance to aquaculture. In 1978, inland and marine catch represented nearly 74 percent of the country's total fishery production and aquaculture only contributed 26 percent. However, in 2013, the trend was completely reversed, with

⁷ Unlike traditional sailing ships, motorized fishing vessels are those vessels powered by diesel or gasoline engines. Motorized ships including inland catch vessels, vessels for aquaculture, fishing transportation vessels, and marine catch vessels.

⁸ "Transform Development Mode, Become a Strong Distant-water Fishing Nation," *China Fishery Daily*, 6 April 2015. Online version is available at http://szb.farmer.com.cn/yzb/images/2015-04/06/01/406yy11_Print.pdf.

⁹ Back in 1978, these companies were called "units" (*danwei*).

¹⁰ Refer to <http://www.worldfishing.net/news101/regional-focus/chinese-processing-industry-to-develop-domestic-market#sthash.xk2Dfvwa.dpuf>.

aquaculture accounting for nearly 74 percent of the country’s total fishery production, as show in Table 4.

Table 4. Production Structure of China’s Fishing Sector (millions of tonnes)

Year	Total	Aquaculture	%	Catch	%
1978	4.65	1.21	26.11	3.44	73.89
1980	4.50	1.35	29.95	3.15	70.05
1985	7.05	3.12	44.23	3.93	55.77
1990	12.37	6.08	49.18	6.29	50.82
1995	25.17	13.53	53.76	11.64	46.24
2000	42.79	25.78	60.25	17.01	39.75
2005	51.02	33.93	66.51	17.08	33.49
2010	53.73	38.29	71.26	15.44	28.74
2013	61.70	45.40	73.58	16.30	26.42

Source: *China Fisheries Yearbook 2014*.

The second structural change is the outward expansion of China’s marine fishery sector, which is evident on two fronts: the shift from inshore fishing to offshore fishing, and the expansion of the county’s distant-water fishing fleet (see Table 5 for definitions). Traditionally, inshore fishing has been the major marine fishing operation in China. As Table 6 shows, inshore fishing represented nearly 90 percent of China’s total marine catch in 1985, but in 2002 this figure dropped to 64.5 percent; in the meantime, the share of offshore fishing increased steadily.

Table 5. Definitions of Inshore, Offshore, and Distant-water Fishing in China

Inshore fishing	Fishing in the Bohai, Yellow Sea, the area within N33, E125; N29, E125; N28, E124.5; N27, E123 in the East China Sea, and the area east to E112 within 80 meter isobath and west to E112 within 100 meter isobath in
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	the South China Sea.
Offshore fishing	Fishing the area outside the N33, E125; N29, E125; N28, E124.5; N27, E123 in the East China Sea (including the waters near Diaoyu/Senkaku islands) and the area east to E112 beyond 80 meter isobath and west to E112 beyond 100 meter isobath in the South China Sea.
Distant-water fishing (DWF)	China defines DWF as citizens, legal entities, and other organizations of China engaging in marine fishing and its processing, supply, and product transportation activities on the high seas and in the sea areas under the jurisdiction of other countries, but does not include fishing activities in the Yellow Sea, East China Sea, or South China Sea.

Source: Fisheries Law of the People's Republic of China.

Unfortunately, the statistics for inshore and offshore fishing at the national level were not available after 2002. Data at the local level suggest that the shift from inshore to offshore fishing continues. The production of inshore fishing dropped to 50.5 percent in Hainan Province in 2007,¹¹ and offshore catch made up close to 60 percent of Guangzhou's total marine catch in 2006.¹²

Table 6. China's Marine Catch Structure

Year	Inshore (%)	Offshore (%)	Total (%)
1985	89.85	10.15	100

¹¹ More information is available at http://www.shuichan.cc/news_print.asp?id=13902

¹² Guangzhou Yearbook 2007.

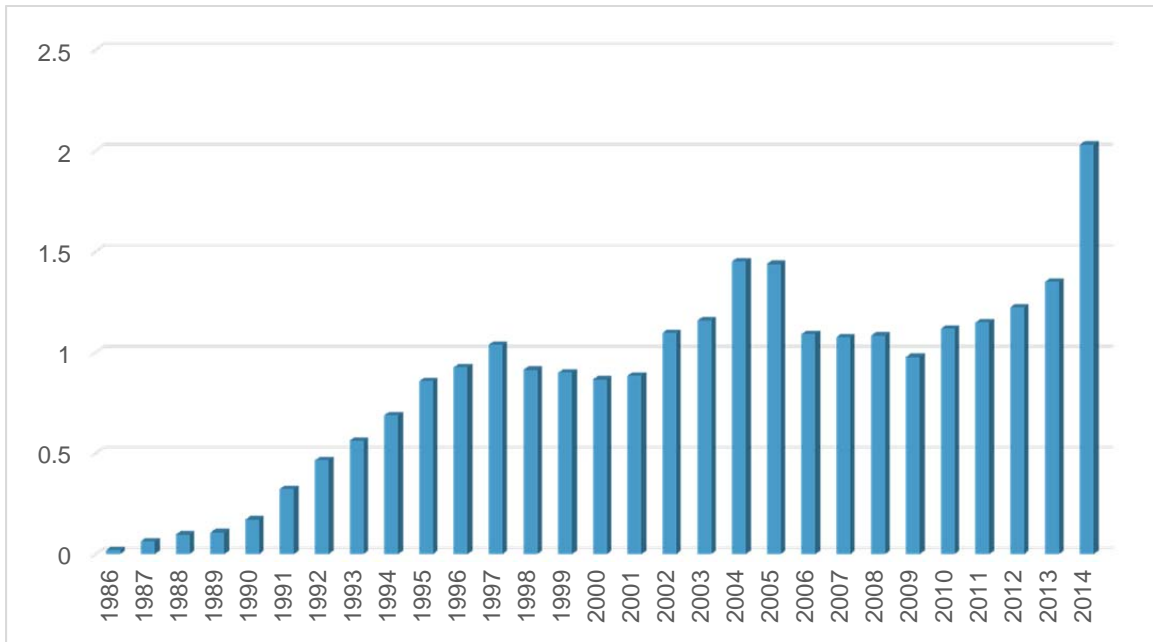
1986	89.39	10.61	100
1987	89.37	10.63	100
1988	88.45	11.55	100
1989	80.67	19.33	100
1990	80.38	19.62	100
1991	72.53	27.47	100
1992	69.72	30.28	100
1993	68.51	31.49	100
1994	67.09	32.91	100
1995	62.90	37.10	100
1996	67.10	32.90	100
1997	65.64	34.36	100
1998	69.07	30.93	100
1999	65.12	34.88	100
2000	65.62	34.38	100
2001	65.12	34.88	100
2002	64.49	35.51	100

Source: *China Fisheries Yearbook* (multiple years).

Next, distant-water fishing (DWF) has been expanding rapidly as well. Over the past 28 years, since it sent its first DWF fleet to West Africa in 1985, China's DWF sector has made remarkable achievements. As shown in Figure 3, the country's annual production of distant-water fishing reached 2 million tonnes in 2014. China has the largest distant-water fishing fleet in the world: as already mentioned 2,460 vessels strong, with more under construction.. China's distant-water fishing fleet is now operating in 40 countries'

EEZs and in the high seas of the Pacific, Indian, and Atlantic Oceans, and, increasingly, in the Antarctic Ocean.¹³

Figure 2. Production of China's Distant-water Fishing (millions of tonnes)



Source: *China Fisheries Yearbook 2014* and *China Fishery Daily 2015*.

Given the gigantic scale of China's fishing industry, this seaward expansion of China's marine fishing sector inevitably has a huge impact on the fishing industry of other regional and global nations. Particularly since the shift from inshore to offshore fishing has been accompanied by an increase in "illegal fishing" by Chinese fishermen. This causes fishing disputes between China and regional countries, which sometimes escalate into serious diplomatic and security issues.

¹³ "Transform Development Mode, Become a Strong Distant-water Fishing Nation," *China Fishery Daily*, 6 April 2015, available at http://szb.farmer.com.cn/ywb/images/2015-04/06/01/406yy11_Print.pdf.

At the same time, rapid expansion of China's DWF contributes to the further depletion of global fishery resources. According to an estimate by the U.N. Food and Agriculture Organization (FAO), over 70 percent of the world's fish species are either fully exploited or depleted and the dramatic increase of destructive fishing techniques worldwide destroys marine mammals and entire ecosystems.¹⁴ Although China claims that the development of distant-water fishing has been based on cooperation with local governments and enterprises, and China's DWF contributes positively to local economic development,¹⁵ there have been reports accusing China's distant-water fishing of contributing to overfishing in Africa as well as in the Northwest Pacific.¹⁶

In addition to overfishing issues, many international commentators and maritime experts attribute China's outward expansion of its marine fishery sector to the country's strategic and political motives, arguing that China has been deliberately encouraging its fishermen to undertake fishing activities in disputed waters in order to assert China's maritime claims in the South and East China Seas.¹⁷ Given its transboundary nature, marine fishing certainly carries an important political and diplomatic function, particularly in waters where disputes exist. For decades, it has been no secret that China, Vietnam, Philippines, and other countries all consider fishermen to be important players in strengthening a country's maritime presence in the disputed waters. Financial and political support is

¹⁴ United Nations, "Overfishing: a threat to marine biodiversity," on *10 Stories the world should hear more about*, available at <http://www.un.org/events/tenstories/06/story.asp?storyID=800>.

¹⁵ China claims that, in West Africa alone, its DSF operation has contributed tax and fees totaling over RMB 800 million and its DSF enterprises have been actively involved in local disaster relief and other socially responsible activities.

¹⁶ Tabitha Grace Mallory, Testimony before the U.S.-China Economic and Security Review Commission, *China as a Distant-water Fishing Nation*, 26 January 2012.

¹⁷ Andrew S. Erickson and Conor M. Kennedy, "Meet the Chinese Maritime Militia Waging a 'People's War at Sea,'" *Wall Street Journal*, 31 March 2015, available at <http://blogs.wsj.com/chinarealtime/2015/03/31/meet-the-chinese-maritime-militia-waging-a-peoples-war-at-sea/>; Harry J. Kazianis, "China's 50,000 Secret Weapons in the South China Sea," *National Interest*, 30 July 2014; Johan Bergenas and Ariella Knight, "Fishing Wars: China's Aggression Could Stoke Future Conflict," *World Political Review*, 19 February 2015; Alan Dupont and Christopher G. Baker, "East Asia's Maritime Dispute: Fishing in Troubled Waters," *The Washington Quarterly*, Spring 2014, pp. 79-98; "Beijing creates armed militia to enforce S China Sea claims," available at <http://www.wantchinatimes.com/news-subclass-cnt.aspx?id=20150111000012&cid=110>.

provided to the fishermen to undertake fishing activities in the contested waters. And, on an ad hoc basis, countries deploy fishermen and fishing boats to confront each other during the maritime crisis. For instance, both China and Vietnam have dispatched fishing vessels during the recent 981 oil rig row.¹⁸ However, it is wrong to suggest that the key factor behind the growing number of fishing incidents involving Chinese fishermen is that the government is using them to advance strategic goals. There are other factors at play:

First, the fishing incidents involving Chinese fishermen do not occur only in disputed waters in the South China Sea and East China Sea, where China has an interest in strengthening its maritime claims; rather, these incidents occur everywhere, including the EEZs of South Korea, Russia, North Korea, Indonesia, and Palau.

Second, the relationship between the Chinese government and the fishermen is complicated. On one hand, it is very difficult for the Chinese government to control and manage its fishermen and prevent them from illegal fishing. On the other hand, fishermen may have good reason to not trust the government officials—in the latest anti-corruption campaign in Hainan, for example, a dozen officials from China’s fishery administration were arrested for stealing or appropriating the fishermen’s fuel subsidy.¹⁹

Third, the Chinese government does not provide financial compensation for many fishermen who are detained or harassed by neighbouring countries (with a few exceptions). If they were acting as agents of the government, one would expect them to receive compensatory payments. On the contrary, some fishermen were fined or disqualified for a fuel subsidy by the Chinese government after they returned to China.²⁰

¹⁸ See “A dangerous game in South China Sea,” *Straits Times*, 30 May 2014, available at <http://www.straitstimes.com/news/opinion/more-opinion-stories/story/dangerous-game-south-china-sea-20140530>.

¹⁹ See Xinhuanews at http://news.xinhuanet.com/fortune/2014-05/09/c_1110619075.htm.

²⁰ See http://news.ifeng.com/mainland/detail_2012_08/08/16638026_0.shtml, based on the author’s field interview with the fishermen in Hainan and Fujian provinces in 2014; http://www.dailyqd.com/2014-09/13/content_127166.htm.

Fourth, while China has appeared to be more assertive in enforcing its maritime claims in the East China Sea and South China Sea, maintaining regional maritime stability is still its top priority. Thus, there is no reason for China to deliberately send its fishermen to the disputed waters to stir up tensions with neighbouring countries. This is the very reason why China banned the Chinese fishermen from fishing in waters near Scarborough Shoal after the China and Philippines maritime standoff in 2012. Furthermore, China does not provide a special fishing fuel subsidy for fishing in Diaoyu/Senkaku islands, despite calls from fishermen and scholars.²¹

Therefore, while this political and geostrategic argument is appealing, it offers only a partial explanation for the outward expansion of China's marine fishery sector. In fact, reality is that without expansion at sea Chinese fishermen would be "trapped" in the country's inshore waters which are being rapidly depleted.

4. China's Problematic Marine Fishery Policies

As part of China's agricultural industry, and given its transboundary nature, marine fishery has five major policy objectives to fulfill, as shown in Figure 3:

- The first and most important policy objective is ensuring supply of fishery products, including high-quality proteins for human consumption and raw materials for related industries.
- The second objective is enriching fishermen's lives and earning foreign reserve. Development in the marine fishery sector can contribute to fishermen's income growth; given the comparative advantage of China's marine fishery sector, it has great potential for exports, which then generates foreign reserves for the country.
- The third objective is protecting the marine environment through sustainable fishing. Overfishing, pollution, and introduced species have had devastating

²¹ See, for instance, http://news.ifeng.com/mainland/special/diaoyudaozhengduan/content-3/detail_2012_09/30/18018126_0.shtml.

effects on the marine environment. On the other hand, sustainable fishing practices—including construction of ocean artificial reefs, restocking, improving water quality, and other measures—contribute to protection of the marine environment.

- The fourth objective is serving the country’s political and strategic interest. It is recognized that promoting the development of the marine fishery sector will contribute to safeguarding China’s maritime interest in the disputed waters. And, a distant-water fishing fleet will enable China to expand fishery cooperation with the international community and will contribute to China’s international strategy.
- The last policy objective is related to the cultural and leisure life of Chinese citizens. Fishing is one of the oldest economic sectors in China and increasingly marine fishing tourism is becoming an important component of the modern fishing industry.

China faces difficult choices in attempting to balance these objectives. Unfortunately, to date, China has elected to emphasize the marine fishery sector’s role in ensuring food security and, to a lesser extent, making marine fishery more secure amid rising tensions in the South China Sea and East China Sea. As a result conservation and international cooperation have suffered the result is a looming fishing crisis.²²

4.1 Overemphasis on Boosting Fishery Production and Fishermen’s Income

Since the fishing industry is considered an integral component of China’s agriculture. China’s marine fishery sector is expected to contribute to China’s food security by achieving self-sufficiency in fishery products. To meet the rising demand for fishery products, boosting production has been considered the topic objective of the development

²² Yue Dong-dong and Wang Lu-min, “Analysis of the Current Status of Strategic Studies on China’s Fishery Industry and a Preliminary Reflection,” *Journal of Agricultural Science and Technology*, 2013, No. 15 (4), pp. 168-175. The same view is also expressed by Tong Chunfeng in her book, *Marine Fishery Transition and Fishermen Transformation*, 2007, Ocean University of China: Qingdao.

of fishery sector for decades. China's fishery production increased from 5 million tonnes in 1978 to 60 million tonnes in 2014.²³ China not only achieved self-sufficiency in the supply of fishery products, but also become the largest exporter of fishery products since 2002. In contrast, the sufficiency rate of fishery products in Japan, which has twice the EEZs of China and one-tenth of its total population, is only around 60 percent.²⁴ Not surprisingly, this high rate of self-sufficiency is being achieved through overfishing domestic fishery resources..

Facing a rising demand for fishery products with rising incomes of Chinese people and constrained and declining catch production—particularly in its inshore water—the Chinese government has made serious efforts to reform the production structure of its fishing industry. The top priority has been given to promoting inland and marine fish farming. This strategy has been quite successful in the sense that production of aquaculture is currently accounting over 70 percent of total production of fishery products in China.²⁵ Although the rapid development of aquaculture successfully replaced the marine catch sector as the biggest contributor to the supply of fishery products, the country's marine catch sector is still under huge pressures to expand for three major reasons.

First, aquaculture has a direct link to marine capture fisheries as fresh fish and fishmeal are important sources of feeds for aquaculture. The preferred protein source in most aquaculture is either fishmeal or “trash fish” (i.e., small fish forming the low-value component of commercial catches). Rapid expansion of China's aquaculture resulted in a surge in demand for low-value trash fish and fishmeal, and this demand is driving the further expansion of the country's marine catch sector. China's domestic production of fishmeal has been falling far short of the rapidly rising demand, and China is by far the world's largest importer of fishmeal, bringing in an average of more than 1.1 million

²³ China Fisheries Yearbook 2014.

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²⁵ China Fisheries Yearbook 2014.

tonnes per year from 2009 to 2013, according to the International Fishmeal and Fish Oil Organization (IFFO) and Oil World statistics.²⁶

Second, while aquaculture produces abundant and cheap fishery products, Chinese consumers are increasingly concerned about the quality and safety of these fishery products, particularly against the backdrop of widespread food safety scandals in China. Reports on the overuse of antibiotics, hormones, and other chemicals, as well as water pollution problems in China's aquaculture,²⁷ have been leading to higher demand for safer and better quality wild marine catch. This is especially the case now that the country's increasingly affluent middle class is able to afford it.

Third, overcapacity in the country's onshore fishing processing sector increases pressure on the marine catch sector. As demand for processed seafood rises, China's fish processing sector has been expanding rapidly. China is also by far the biggest fish processor in the world. In 2013, China had 9,774 fish processing companies, with annual processing capacity of 27.5 million tonnes. In the same year, however, China's fish processing sector produced 19.5 tonnes of fishery products, of which 80 percent are from marine fishery and 20 percent are inland fishery. This indicates that the utilization rate of China's processing capacity was only slightly above 70 percent in 2013.²⁸

Therefore, while the Chinese government has recognized the need to regulate its marine catch, the safeguarding of the supply of its fishery products is still the overarching principle that guides the development of the country's fishing industry. As seen in the country's 12th five-year plan for the fishing industry, meeting the rising demand for fishery products is listed as the fundamental objective of China's fishing industry.²⁹ In recent years, facing the mounting challenge to achieve national food security, the notion

²⁶ See <http://www.undercurrentnews.com/2014/10/30/chinese-fishmeal-regulatory-changes-not-seen-boosting-imports/>.

²⁷ See <http://www.nytimes.com/2007/12/15/world/asia/15fish.html?hp&r=0>.

²⁸ *China Fishery Yearbook 2014*, p. 256.

²⁹ Refer to China's 12th Five-Year Plan on Fishery Development, available at http://www.moa.gov.cn/zwillm/ghjh/201110/t20111017_2357716.htm, accessed on 23 April 2012.

of “blue granary or a marine based food security” has emerged as a popular concept, and sourcing food from the seas is being considered one of the key approaches to achieve food security in China.³⁰ A report in 2010, which was produced by a high-level task force on strengthening the country’s DWF sector, argued that China cannot merely rely on its resources on land and its territorial waters and EEZs to satisfy the country’s growing demand for food. Instead, China should actively explore and make use of ocean resources, particularly marine biological resources in the high seas because they are seen as the largest store of protein.³¹

In addition, to safeguard the country’s food security, China implements the system of provincial governors assuming responsibility for the "rice bag" (grain supply) program and city mayors assuming responsibility for the "vegetable basket" (non-staple food supply) program. Under this system, the sub-provincial leaders are held responsible for ensuring a sufficient and stable supply of non-staples, including fishery products. Moreover, as compared with the central government, which is concerned about food security, local governments are more interested in the role of the marine fishery sector in generating foreign reserve and boosting GDP.

In China’s coastal regions, particularly those less developed areas, marine fishery is being considered as one of the pillars of local economy. In recent years, despite the fact China’s agricultural trade registered a huge deficit—over 50 billion in 2014—China remains the world’s biggest exporter of fishery products. For 12 consecutive years, China has been the world’s largest exporter of fish and fish products. In 2013, China’s total export of fishery products reached USD 20 billion, representing 15.6 percent of the global total.³² Thus, it is not surprising that many coastal regions set a very high growth rate for the fishery sector. For example, China’s Hainan Province, which relies heavily on the marine

³⁰ Qing Hong. “Research summary on the construction of marine food system.” *Marine Sciences*, 2015, Vol. 39, No. 1.

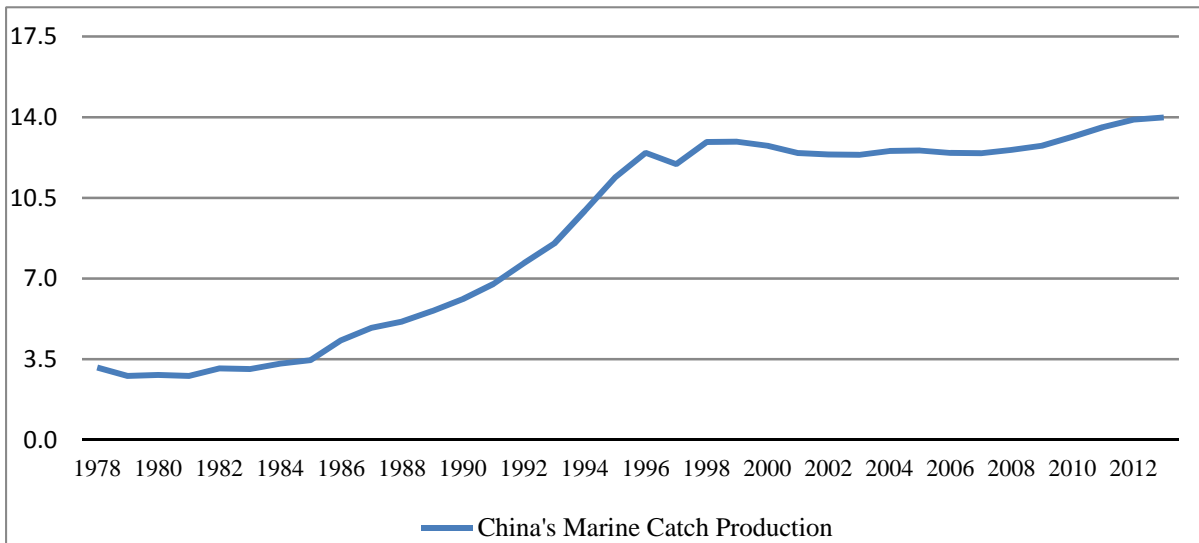
³¹ Ji, Xiaonan, Shenli Liu, and Task Force. “To Support Distant-water Fishing as a Strategic Industry.” *China National Conditions and Strength*, 2010, No. 9.

³² For more information, see http://news.xinhuanet.com/fortune/2014-06/30/c_1111384848.htm.

catch sector for economic development, set an annual growth target of 13.8 percent for its fishing industry in its 12th Five-Year Plan for Fishery Development. It also intends to boost the annual production value of the fishing industry to RMB 45 billion in 2015 and its share in the province GDP to 12 percent.³³

4.2 Halfhearted Efforts on Sustainable Development

Figure 4. China's Annual Marine Catch Production



Source: *China Fisheries Yearbook*, multiple years.

In the mid-1990s, facing rapidly depleting fishery resources in its inshore waters as well as deteriorating marine ecology due to overfishing and pollution, China implemented a fishing ban in Bohai, the Yellow Sea, and later in the East China Sea and South China Sea. In 1999, China introduced the Zero Growth Policy for marine fishery; in 2003, it formally began to implement the Fishermen Transfer and Fishery Transition Programme, which intends to preserve fishing resources and ensure sustainable development of the fishing industry by reducing the number of fishing vessels and fishermen as well as controlling marine catch intensity. However, because boosting production and increasing

³³ Refer to http://www.gov.cn/gzdt/2011-03/10/content_1821502.htm.

income is still the overarching objective and the fishing fleet, to a certain degree, satisfies a broader political and strategic agenda, the country's efforts to protect fishery resources and ensure sustainable development of the sector are, not surprisingly, less effective than they should be.

Looking at official data, the results seem quite impressive. In terms of marine catch production, after the introduction of the Zero Growth Policy in the late 1990s, the remarkable growth trend had indeed been reversed, showing negative growth or zero growth throughout the first decade of the 21st century before gradually moving upward in the last few years (Figure 2). Of the total number of marine fishery vessels, as shown in Table 1 from 2004 to 2013, the size of the marine catch fleet decreased from 220,000 to 196,800, representing more than a 10-percent reduction in the country's total fishing fleet.

While these achievements appear to be impressive, the reliability of the data remains in question. Official data suggest that China's marine catch production has not grown since the late 1990s, but it is often argued that China, which was previously known to over report its domestic marine catch, now underestimates its annual catch production. For instance, according to research by a Chinese research team led by Lu Huosheng, a professor at Guangdong Ocean University, China's annual catch from the South China Sea exceeded 4.8 million tonnes as compared with the official data of 3.4 to 3.5 million tonnes in recent years.³⁴ In 2012, a study conducted by European Parliament concluded that the catch of China's distant-water fleets is estimated at 4.6 million tonnes per year globally for the 12-year period from 2000 to 2011, compared with an average of 368,000 tonnes per year reported by China to FAO.³⁵ One of the key reasons for the underestimation of annual marine catch production is the existence of a large number of "black ships"—fishing vessels without relevant legal permits. Taking Zhejiang Province,

³⁴ See more at <http://roll.sohu.com/20120627/n346613241.shtml>

³⁵ Roland Blomeyer, Ian Goulding, Daniel Pauly, Antonio Sanz and Kim Stobberup, "The Role of China In World Fisheries". *Study Report*. European Parliament. 2012.

for example, while official statistics indicate that in 2014 there were 22,000 fishing vessel with relevant legal permits, there were also about 12,000 black ships.³⁶

Table 7. China’s Marine Fishing Fleet

Year	Number	Total tonnage	Average tonnes	Total engine power (millions of KW)	Average engine power (KW)
2004	220,000	5,559,000	25.3	12338	56.1
2013	196,800	6,687,600	34.0	13614	69.2
2004-13	-10.55%	20.30%	34.48%	10.34%	23.35%

Source: *China Fisheries Yearbook*, multiple years.

Even though the official data show that the number of fishing vessels decreased, the average size and horsepower of the fishing fleet improved significantly (Table 7). This is primarily due to conflicting fishing subsidies provided by the government. For example, after the introduction of reduction and transfer policy, China’s central fiscal agency provided special funds to support the policy RMB 1.2 billion between 2002 to 2006. In comparison, in 2006 China made a historical decision to abolish the agricultural tax and started subsidizing agricultural production; as a subsector, marine fishery receives financial support in the form of a fishing fuel subsidy. Parallel to the phenomenal increase in China’s agricultural subsidy during the same period, the fishing fuel subsidy increased from RMB 5.43 billion—88.6 percent of the central government’s total spending on fishery in 2007—to RMB 23.4 billion in 2012.³⁷ On an average basis under the Zero or Negative Growth Policy, the government will provide RMB 2,500 per Kilowatt in 2011 for every ship downsized. In contrast, in some areas, under the fishing fuel subsidy, fishermen will receive RMB 1,250 per Kilowatt per year.³⁸ This means that, if a fishing

³⁶ See news report from *Chinanews* available at <http://www.chinanews.com/ny/2014/09-19/6608160.shtml>

³⁷ *China Fishery Yearbook 2014*.

³⁸ Zhong Xiaojing, Yu Guoping, Zhou Wei and Ji Guangkun. “Advices on application of diesel subsidies in fishery”. *Fishery Information and Strategy*. 2012. Volume 27, No 4. Pp:

boat owner participates in the government ship reduction programme he can get is only two years of the fishing fuel subsidy.

The huge difference in the fuel subsidy and the financial support on fishermen transfer and fishing boat reduction contributed to the boom of the fishing vessel building sector. Some reports suggested that the country's fishing vessel building price index jumped by 20 times between 2006 and 2012.³⁹ The fishing fuel subsidy is provided to the fishing boats with official fishing permits, and the amount of the money will be based on the horsepower of the vessel regardless of the actual amount of fuel consumed and where the fishing boat goes. The bigger the fishing vessel, the greater the fishing fuel subsidy it will receive. To receive larger fishing fuel subsidies, the fishermen began to invest massively in building new and larger fishing vessels. As no new fishing permits are issued, fishermen with licenses improve their capacity to catch more fish by building bigger boats. They are able to circumvent size limits by purchasing horsepower quotas from their peers.

With the bigger and better fishing boats, fishermen who were essentially limited to fishing in inshore waters where few fish are available, venture further to sea—be it the disputed waters in near Spratly Islands or Diaoyu/Senkaku Islands or even other countries' EEZs where fish are plentiful. The outward expansion of China's marine fishery sector is also partially due to the fact that China's efforts to curb overfishing and protect marine ecology primarily concentrated on inshore waters; while in the meantime, the country encourages offshore and distant-water fishing.

Due to overfishing, pollution, and land reclamation, fish stocks in China's traditional fishing grounds have quickly depleted. Seventy percent of China's beaches are polluted, and 50 percent of tidal wetlands have disappeared. The Bohai fishing ground, Zhoushan fishing grounds, the coastal fishing grounds of South China Sea, and the Beibu Gulf

³⁹Shi Chunbio. Fisherman has no fish to catch, but fishing vessel horsepower index increased 20 times in 7 years. *Qianjiang Evening New*. 17 December 2013.

fishing grounds now exist in name only.⁴⁰ In particular, big fish in China's Bohai are almost gone, and the annual production of small fish is less than 10 percent its peak amount.⁴¹

Meanwhile, to ensure a stable supply of fishery products and protect fishermen's livelihood, China encourages its fishermen to go further into the seas to make a living. During his visit to the Tanmen fishing town in 2013, Xi Jinping urged Chinese fishermen need to "build bigger ships and venture even further into the oceans and catch bigger fish."⁴² In practical terms that meant offshore fishing near the Spratly Islands and distant-water fishing.

In 1999, China introduced a fishing ban in South China Sea. This annual fishing ban lasts from May 16 to August 1, covering areas north of the 12th parallel, including Scarborough Shoal (Huangyan Island). Since the Spratlys are south of this line they are not covered by the ban and, and Chinese fishermen receive an additional fishing fuel subsidy, called the Spratly Islands Special Fuel Subsidy as an incentive to fish there. The Spratly fuel subsidy was introduced in 1995 since at that time not many Hainan fishermen ventured that far south. Over the past twenty years, this has changed dramatically. As fish stocks in China's inshore waters have been depleted and competition has intensified with the introduction of bigger and more powerful ships, more fishermen are applying for fishing permits to fish in waters near the Spratly Islands.

In 2013, China established a "South China Sea fishery resources survey and evaluation programme" which was justified by a two year study that claims that there are over 1.8 million tonnes of fishery resources in waters near the Spratly Islands with annual catchable amounts around 500,000 to 600,000 tonnes, as well as over 20 high-value

⁴⁰ See more at http://photo.china.com.cn/news/2014-12/09/content_34269221.htm

⁴¹ See news report from People.cn, available at <http://opinion.people.com.cn/n/2015/0311/c159301-26671525.html>

⁴² Minnie Chan. "Xi's fishermen visit seen as warning to South China Sea neighbours," *South China Sea Morning Post*, 10 April 2013.

fishery species.⁴³ This makes the Spratlys a valuable fishing ground for China. Of course it is also a valuable fishing ground for Southeast Asian countries, especially Vietnam, Indonesia, and Philippines. As a result there is growing competition for access to Spratly fishing grounds which means fishing disputes and the detention of “illegal” fishermen by all the nations involved will continue to be a source of tension in this half of the South China Sea

Promoting distant water fishing is the other approach emphasized by the Chinese government to address domestic demand, supply imbalance of fishery products, and to provide work for fishermen.⁴⁴ While the remarkable development of DWF is celebrated as a Chinese governmental success story and an important approach to alleviate China’s domestic resource shortages, the international community is worried that massive expansion of China’s DWF could lead to localized depletions and declines in catch rates across the fisheries around the world and jeopardize the livelihoods of locally owned small-scale fishermen in many poor countries. In October 2014, international suspicions about China’s DWF seemed to be confirmed when the China Tuna Industry Group’s was preparing to float an IPO. The draft IO prospectus stated China would not crack down on companies engaged in illegal fishing because it never had in the past, and that the catch limits set by the Regional Fisheries Management Organizations apply only to China the country, not to actual Chinese fishing boats.⁴⁵

4.3 Fishermen and Growth of Maritime Militia⁴⁶

⁴³ See news report from People.cn, available at <http://politics.people.com.cn/n/2015/0224/c1001-26589833.html>.

⁴⁴ Another point worth noting is that lobbying by the industrial and local government is also one of the factors contributing to the development of distant-water fishing in China. Government of Qingdao, which is the leading processor and exporter of high-value cold fish, and its local scholars are the key force behind the “Blue Granary” concept, and companies such as China National Agricultural Development Group are also using the food security narrative to gain more fiscal support from the government for their expansion.

⁴⁵ Shannon Service. “Tuna firm’s bungled IPO exposes China’s flouting of global fishing rules,” *The Guardian*, 27 October 2014, available at <http://www.theguardian.com/sustainable-business/2014/oct/27/toyo-reizo-shell-companies-fisheries-china-tuna-overfishing-oceans-ipo>

⁴⁶ The militia is an armed mass organization not released from production. It is a reserve force of the PLA and the basis for the prosecution of a people’s war under modern conditions. The General Staff

Although it is an over exaggeration for some commentators to conclude that China is intent on waging a “People’s War” at sea, it is also true that the Chinese government has taken efforts to strengthen the fishermen’s role in protecting the country’s maritime interests in the disputed waters. Developing a strong fishing fleet is considered an integral to becoming a maritime power. In 2013, during the aforementioned Xi Jinping’s visit to the Tanmen fishing town of Qionghai City in Hainan Province, he met the members of the maritime militia and told them that “the maritime militia members should not only lead fishing activities, but also collect oceanic information and support the construction of islands and reefs.” He went on to also praise fishermen for protecting China’s maritime interests in the disputed waters in South China Sea.⁴⁷ Amid the rising tensions in the South China Sea and East China Sea, renewed attention is being given to the development of maritime militia. Some Chinese scholars and security experts have been advocating that maritime militia should be China’s first line of defence in the South China Sea and East China Sea.⁴⁸ In the past few years, several coastal cities have established maritime militia units.⁴⁹

While development of maritime militia has long been stressed by Chinese leaders and military officials, thanks to Xi it gained new momentum. Since April 2013, numerous articles have been published in the *PLA Daily* and *National Defence Magazine* urging for more support to develop maritime militia forces, and more financial resources were allocated to provide training for the fishermen and subsidy for building new fishing

Headquarters administers the building of the militia under the leadership of the State Council and the CMC. Under the command of military organs, the militia in wartime helps the standing army in its military operations, conducts independent operations, and provides combat support and manpower replenishment for the standing army. In peacetime, it undertakes the tasks of performing combat readiness support, taking part in emergency rescue and disaster relief efforts, and maintaining social order. See more at http://eng.mod.gov.cn/Database/WhitePapers/2004-09/07/content_4005644.htm.

⁴⁷ *China Daily*, “President pays visit to Hainan fishermen,” 11 April 2012, available at http://usa.chinadaily.com.cn/2013-04/11/content_16394643.htm.

⁴⁸ See more at <http://mil.huanqiu.com/Observation/2012-06/2862590.html>, and http://ngdsb.hinews.cn/html/2013-01/27/content_5_6.htm.

⁴⁹ See story of Guangdong’s maritime militia force at http://news.ifeng.com/mil/jqgcs/detail_2013_07/11/27393462_0.shtml; establishment of maritime militia force in Pingtan of Fujian province at http://fjnews.fjsen.com/2014-05/20/content_14115523.htm; and maritime militia force of Sansha at <http://www.hinews.cn/news/system/2014/07/29/016828346.shtml>.

vessels.⁵⁰ Consequently, many coastal cities have quickly set up maritime militia units in recent years. In the past, China's maritime militia forces normally relied on renting the fishing vessels of the fishermen or fishing companies, but it appears that China is building a state-owned fishing fleet for its maritime militia force in South China Sea. China's Hainan Province has ordered the building of 84 large militia fishing vessels for Sansha City; 10 fishing vessels will be delivered in 2015.⁵¹

But like so many other contradictions in China's fishery policies, the maritime militia policy is in conflict with the desire to curb overfishing and protect marine resources. The establishment of maritime militia across the country means that more financial support will flow to the marine fishery sector, which attracts more fishermen and further spurs the construction of new fishing vessels. In addition, patriotism could be used by some fishermen to cover their illegal fishing activities that harm marine ecology. For example, instead of fishing in the Spratlys more and more fishermen have turned from fishing to harvesting endangered giant clams, for the giant clam handicraft and aphrodisiac industries which offer bigger profits. Similarly, in the East China Sea, as prices of red coral have skyrocketed in recent years, fishermen from Zhejiang and Fujian go after the red coral in the waters near the disputed Diaoyu/Senkaku islands. Driven by huge profits, some Chinese fishermen even travel hundreds of kilometers to waters near Japan's Ogasawara to poach coral from the seabed.⁵²

4.4. Recreational Fishing on the Rise

Apart from providing both employment and a way of life for many, fishing has always been an important cultural function in terms of promoting stronger families and communities. In recent years, as increasingly affluent urban dwellers want to temporarily

⁵⁰Wang Xinhai.2014. "Paths to push forward new model of marine border defence and civil military cooperation"推进新型海防建设军民深度融合发展的路径选择.

⁵¹ See <http://www.sansha.gov.cn/page.php?xuh=1624>; 关于在文昌木兰头规划建设三沙战略腹地和民兵渔船停泊港的建议.

⁵² See more at <http://mil.huanqiu.com/Observation/2012-06/2862590.html> and http://ngdsb.hinews.cn/html/2013-01/27/content_5_6.htm.

escape from fast-paced urban life and enjoy the natural beauty of the rural areas, recreational fishing has been booming in China. Meanwhile, as the Chinese marine fishery sector suffers from overcapacity and declining fishery stocks, the Chinese government sees the recreational fishing as an important approach to provide alternative employment and incomes to the fishermen and to push forward economic structural adjustment.

From 2005 to 2010, China's recreational fishery sector had growth at 22.6 percent per annum, and China's 12th Five-Year Plan for Fishery Development identified recreational fishing as one of the five major modern fishery sectors that will be made a priority for future development.⁵³ Although rapid growth of recreational fishing has not only enriched the Chinese social life but also provided significant economic benefits for the fishermen, it brings concerns as well. For instance, in 2013, China began running tourism cruises to the disputed Paracel Islands as one way to demonstrate Chinese sovereignty while promoting local economic development. However, reports show that some tourists have been poaching endangered marine species, including reefer sharks and red coral, thus threatening marine ecology and sustainability of the fishery sector.⁵⁴

5. Future Trends of China's Fishing Industry

Although the Chinese government has made efforts toward liberalizing the country's fishing industry, the future development trajectory of the sector will continue to depend on the evolvement of government fishing policies, which will largely be determined by how China balances the above-mentioned five policy objectives.

5.1 Key Driving Factors

First and foremost, food security concern will continue to be a big, or perhaps an even bigger, driver for the future development of China's fishing industry. As China is facing

⁵³ See http://www.yyj.moa.gov.cn/bjwj/201212/t20121212_3103375.htm.

⁵⁴ See more at <http://www.scmp.com/news/china/article/1699255/tourists-fishing-endangered-species-south-china-sea-prompts-crackdown>.

increasing difficulties to feed its growing and increasingly affluent population, it is looking to the seas for food. Although China has achieved 11 consecutive years of increase in grain production from 2003 to 2014, the gap in its grain demand and supply continues to widen. In 2014, China's grain import reached 100 million tonnes, representing a 300-percent increase from 2003 figures. And the country's grain self-sufficiency rate was 84 percent in 2014, falling below the official target of 95 percent.⁵⁵ China's imports of pork, beef, and poultry products experienced dramatic increases as well. Given that it is increasingly challenging for the country to maintain food self-sufficiency, China is hoping that its fishing industry, which enjoys a global comparative advantage, will play a bigger role in feeding its people.

Because of rising incomes, the Chinese diet has already become increasingly diversified, including more high-quality proteins such as fish.. And the Chinese government has introduced plans to increase the share of fishery products in the Chinese diet. On 10 February 2014, China's State Council officially published the "National Program for Food and Nutrition Development (NPFND (2014-2020))." This program focuses on safeguarding effective food supply, optimizing food structure, and improving the nutritional status of residents.⁵⁶ In the case of high-quality protein consumption, it appears that China intends to reduce the country's meat consumption, which is traditionally dominated by pork, while promoting higher intakes of fishery products.

In June 2013, at the "National Tele-conference on Efforts to Develop a Modern Fishing Industry," China's vice premier, Wang Yang, highlighted that, because China is facing severe scarcity of land and water resources, to meet the ever-rising demand for food, China must have a grand resources and food security strategy that is to be supported by a diversified food supply.⁵⁷ He then stressed that China has vast marine territories and rich fishery resources, which offer great potential for future development; thus, developing a

⁵⁵ See more at <http://china.huanqiu.com/hot/2015-03/5844227.html>.

⁵⁶ State Council. 2014. "National Program for Food and Nutrition Development (NPFND 2014-2020)."

⁵⁷ See more at http://www.gov.cn/guowuyuan/2015-03/30/content_2840388.htm.

modern fishing industry will boost the supply of fishery products and meet the rising demand for high-quality animal protein, contributing to the country's food security.⁵⁸

The second driver for the fishing industry is its contribution to China's economic development. In its 12th Five-Year Plan, China the marine economy is tied to the national strategy. The plan states; "promote the development of marine economy, adhere to the land and sea to co-ordinate development, formulate and implement marine economy development strategy, improve marine development, control, and comprehensive management ability."⁵⁹ A strong and thriving fishing economy is considered an important part of its marine economy. In 2011, China approved Zhoushan,⁶⁰ which holds China's largest offshore fishing ground and has a fishery sector worth around RMB 15 billion a year, as the country's fourth state-level new district to promote marine economy.⁶¹ And, in April 2015, China's Ministry of Agriculture issued the study "Opinions on Building the National Distant-water Fishing Base in Zhoushan." According to this document, Zhoushan will build the national port for DWF, international fishery center, pelagic processing and logistic zone and repair center for a DWF fleet. It aims to achieve DWF sector total production value of RMB 30 billion by 2020.⁶²

In terms of fishery trade, China expects that the sector will continue to expand. According to *China's 2015 Agricultural Report*, in the next 10 years, China's fishery sector will continue to expand and the country will remain as the leading exporter for fishery products. It is forecasted that fishery production in 2020 will reach 73 million tonnes, 77 million tonnes by 2024, and catch production will reach 17 million tonnes. In terms of fishery trade, it is expected that, by 2024, China's fishery export will reach 5.4 million tonnes, up from 4.3 million tonnes in 2015.⁶³

⁵⁸ Ibid.

⁵⁹ China's 12th Five-Year Plan, 2012.

⁶⁰ Just south of Shanghai on the East China Sea, Zhoushan is a prefecture-level island city in northeastern Zhejiang Province of Eastern China.

⁶¹ See Xinhua news at http://news.xinhuanet.com/english2010/china/2011-07/07/c_13971902.htm.

⁶² See http://www.zj.xinhuanet.com/newscenter/focus/2015-04/23/c_1115059066.htm.

⁶³ See http://www.agri.cn/V20/SC/jjps/201504/t20150421_4538195.htm.

In addition, as the “One Belt-One Road” strategy has become the central focus of China’s international strategy, strengthening fishing cooperation with regional countries is considered one of the key dimensions in building the 21st Century Maritime Silk Road. Officials from both central government and China’s major fishing provinces, such as Zhejiang, Shandong, Fujian, and Guangxi, have been actively advocating that fishing development needs to be incorporated into China’s One Belt-One Road strategy.⁶⁴ Some have been even promoting the idea that fishing cooperation should become a priority in China’s efforts to building the 21st Century Maritime Silk Road, which provides additional incentives for China to develop its marine fishery sector.⁶⁵

The third and final driver is the fact that China’s Maritime Power Strategy calls for a stronger marine fishery sector. In December 2012, the 18th Party Congress Work Report by China’s former President, Hu Jintao, pledged that China would enhance its capacity for exploiting marine resources, develop the marine economy, protect the marine ecological environment, and resolutely safeguard China's maritime rights and interests. Hu’s report represented a broad policy consensus by the party leadership that China should aspire to become a maritime power.⁶⁶ While China has been paying growing attention to the country’s maritime interests for more than a decade, following its growing integration in the global economy, placing the safeguard of maritime interests and the goal of becoming a maritime power in the Congress report makes these issues central to the party’s policy agenda.

A strong marine fishery sector is important to China’s efforts to become a maritime power. As discussed above, the strengthening maritime militia will be helpful protecting China’s maritime interests in disputed waters, particularly in the South China Sea, while expanding China’s distant-water fishing is also seen as contributing to China’s growth as

⁶⁴ See http://www.dnkb.com.cn/archive/info/20140909/072718147605167_1.shtml; see *Zhoushan Daily News* available at http://www.zhoushan.cn/zdzt/zjy/zxbd/201504/t20150422_709567.htm.

⁶⁵ See <http://www.cfmi.org.cn/index.php?m=content&c=index&a=show&catid=19&id=1147>.

⁶⁶ 18th Party Congress Report.

a maritime power.⁶⁷ In 2010, a report published by a task force composed of 12 people affiliated with the State Council, Chinese DWF companies, industry associations, and universities that advocate supporting and strengthening China's DWF sector argued that:

- DWF helps to safeguard China's ocean interests and seek international space for development,
- DWF can play a critical role in times of crisis in foreign countries to evacuate overseas Chinese, and
- DWF can provide crucial assistance to the Chinese Navy in terms of developing China's knowledge base with respect to prevailing local conditions, and can provide logistics and supply to the navy when operating in the blue water.⁶⁸

In November 2012, China's Ministry of Agriculture issued "Opinions on Promoting Sustainable and Healthy Development of Distant-water Fishing," which stressed that DWF is of strategic importance to China as it helps to safeguard national maritime interest, enhance China's international status, and influence and solidify China's cooperation with foreign countries. Since the 18th Party Congress, this strategic role of DWF has been further recognized, and both the central and local governments have been providing huge financial and political support to develop China's DWF.⁶⁹

5.2 In 2013 a Paradigm Shift in China's Marine Fishing Policy

Since the 1990s, facing rapid depletion of fishery stock due to overfishing and the signing of bilateral fishermen agreements with Vietnam, South Korea, and Japan, China has followed a strategy of making aquaculture a priority while coordinating the development

⁶⁷ Phillip C. Saunders, Christopher D. Yung, Michael Swaine, and Andrew Nien-Dzu Yang (eds.), 2011, *The Chinese Navy: Expanding Capabilities, Evolving Roles*, Washington, D.C.: National Defense University Press (p. 84).

⁶⁸ Task Force, 2010. Supporting and Strengthening Distant-water Fisheries,

⁶⁹ For instance, Fujian government, http://www.fujian.gov.cn/zwgk/flfgjd/201410/t20141020_885379.htm; Qingdao government, <http://qdcz.qingdao.gov.cn/czi/2/5/45/54/131206050312489867.html>; Shandong government, http://www.shandong.gov.cn/art/2015/1/7/art_464_44074.html; and Liaoning government, http://www.ln.gov.cn/zfxx/zfwj/szfwj/zfwj2011_99988/201307/t20130729_1153212.html.

of catch sector and aquaculture. Under this strategy, the central government introduced the Zero Growth Policy to control the annual production of China's marine catch, and took steps to reduce the number of fishermen and fishing vessels. Hence, during this period, the outward expansion of China's marine fishery sector was largely the result of fishermen's own economic motivation, as well as the support from the local governments.

Since the 18th Party Congress, however, there has been a convergence of interests among all key players, including the central government fishermen and local government and commercial interests to expand China's maritime fishery sector. Most notable is the shift of central government policies aimed at restraining the development of marine fishery to one of actively promoting the expansion of the marine fishery sector. This is reflected in the greater emphasis the marine fishery sector receives in its national strategies. Specifically statements of intent that address safeguarding national food security, expanding the marine economy, constructing the 21st Century Maritime Silk Road, and most important, building China into a maritime power.

On 8 May 2013, China's state council issued "Several Opinions of the State Council on Promoting the Sustainable and Healthy Development of Ocean Fishing Industry." This is the first time since the establishment of the People's Republic that China has issued an official guiding document on the development of marine fishery in the name of the State Council.⁷⁰ While this document appears to be a summary of China's previous fishing policy (stressing such things as the need to protect the marine environment, curb inshore fishing, and promote offshore and distant-water fishing), it, in fact, reflects a paradigm shift in China's marine fishing policies. The guidance of "Several Opinions of the State Council on Promoting the Sustainable and Healthy Development of Ocean Fishing Industry" addressed new objectives for China's marine fishery sector. One, marine fishery sector should be included as an element pf into China's Maritime Power Strategy. It also called for speeding up the structural adjustments and indicated that

⁷⁰ See more at <http://finance.people.com.cn/n/2013/0626/c1004-21982738.html>.

safeguarding the country's maritime interests will be the main theme of the future development of marine fishery sector.⁷¹ This document will no doubt have a tremendous impact on the future development of China's marine fishery sector.

6. Concluding Observations

China is not neglecting marine ecology protection as a top priority. The central focus of its environmental protection efforts will still be on curbing inshore fishing. In 2014, China invested 400 million RMB on protecting marine fishery resources, and more than 75 percent of the money was spent on releasing fish stocks in China's inshore waters.⁷² China will not approve the building of several types of fishing vessels that are considered highly damaging to the marine environment and fishery resources, including bottom trawling fishing ships, set stow net ships, and light seining ships. China is also planning to reform the Fishing Boat Reduction and Fishing Fuel Subsidy Programmes, hoping to consolidate them to achieve the policy goal of protecting fishery resources and promoting fishing structural change. In addition, China will continue to impose fishing bans in China's inshore waters and is considering raising the entry requirement for inshore fishing.⁷³ Furthermore, China also started to run fishing quota pilot programmes in inshore waters in some provinces, which could be expanded throughout the country in the future.

Offshore fishing and distant-water fishing, however, will not be adversely affected by the country's efforts to protect the marine environment. On the contrary, to ensure a steady supply of wild fishery products, absorb the excess fishing labor and fishing vessels from the decrease in inshore fishing, as well as to contribute to China's maritime power strategy, China aims to expand its offshore fishing and further encourage distant-water

⁷¹ State Council. 2013. "Several Opinions of the State Council on Promoting the Sustainable and Healthy Development of Ocean Fishing Industry." More information from news release of Ministry of Agriculture, on 26 June 2013, is available at http://www.moa.gov.cn/zwl/m/zwdt/201306/t20130626_3504906.htm.

⁷² http://www.farmer.com.cn/jpd/hyyw/201505/t20150504_1030285.htm.

⁷³ For instance, certain types of fishing vessels that are very damaging to marine ecology will not be allowed to undertake fishing activities.

fishing.⁷⁴ In 2012, China initiated an RMB 8-billion fishing vessel rebuilding programme that aims to modernize the country's fishing fleet. Small, old, and energy-intensive fishing vessels are being scrapped, and the central government will invest up to 30 percent of the total investment to build new fishing vessels. At the local level, more financial support is provided to the fishermen to encourage them to building bigger and better ships. For instance, under its "Ten Thousand Fishing Vessel Rebuilding Programme," Jiangsu Province allocated RMB 178 million to support the reconstruction of over 700 vessels in 2014.⁷⁵

Similarly, China plans to control the intensity of inshore aquaculture and promote offshore aquaculture-ocean farming.⁷⁶ Rapid expansion of China's aquaculture has contributed greatly to China's food security, but intensive farming practices and overuse of chemical inputs have led to serious environmental pollution and raised food safety concerns. As a result, China sees ocean farming as an important alternative for future development. In 2014, China spent RMB 94 million on building demonstration ocean farms.⁷⁷

Based on National Marine zoning plans issued by the State Council in 2012, China has assigned different priorities for fisheries development in the country's four marine zones—Bohai, Yellow Sea, East China Sea, and South China Sea. For Bohai and Yellow Sea, China intends to control marine fishing, restore fishery stock, and promote the development of modern aquaculture and ocean farms. For East China Sea, China intends to step up protection for its major fishing grounds and promote the development of distant-water fishing. For South China Sea, China intends to further utilize the fishery resources in such waters as Beibu Gulf, Scarborough Shoal and the Spratly Islands. In addition, it also intends to boost the development of marine tourism, including

⁷⁴ This information comes from several Opinions of the State Council on Promoting the Sustainable and Healthy Development of Ocean Fishing Industry.

⁷⁵ See <http://gjzx.jschina.com.cn/20219/201410/t1705174.shtml>.

⁷⁶ Traditional aquaculture normally takes place in coastal waters; offshore aquaculture, or ocean farming, is an emerging approach to aquaculture in which fish farms are moved some distance offshore.

⁷⁷ See http://www.farmer.com.cn/jjpd/hyyw/201505/t20150504_1030285.htm.

recreational fishing in the South China Sea. Ocean farming in the South China Sea is considered an important approach to develop the fishery sector as well. With the completion of China's land reclamation project in the South China Sea by the end of 2015, offshore fishing, recreational fishing and ocean farming in the South China Sea will be further boosted

Finally it is hard not to be impressed with the tremendous expansion of China's fishing industry since 1978.. China is now the biggest fish producer in the world with annual fishery production accounting for over one-third of the global total. It is also the world's top exporter and one of the major importers of fishery products.

But, rapid development of fishery production has been achieved through overfishing, and the concomitant depletion of fish in its near waters. China's problematic fishing policies, particularly the fishing fuel subsidy policy and maritime militia policy, undermine its efforts to curb overfishing and continue to spur further expansion of its fishing capacity. Overcapacity of China's fishing fleet and depleting fishery resources in China's inshore waters have resulted in dramatic structural changes of its marine fishing sector—a shift from inshore to offshore fishing and expansion of distant-water fishing. These structural changes, though largely beneficial to China, bring huge challenges to regional and global fishery sector and maritime security.

The convergence of interests among all key players, including the central government fishermen and local government and industrial interests, have resulted in the decision to view the fishing industry in strategic terms; highlighting its role in safeguarding national food security, expanding its marine economy, contribution to the 21st Century Maritime Silk Road, and most important, contributing to the objective of building China into a Maritime Power. This means that, at the regional level, fishery disputes between China and regional countries will probably intensify and, at the global level, expansion of China's distant-water fishing will further jeopardize the world's fishery resources.