People's Republic of China

Developments in fisheries and aquaculture policy, 2015-16

- The 13th five year plan (2016-2020) envisions a more sustainable and market-oriented fishery in the People's Republic of China (hereafter "China"), continuing a shift away from past emphasis on increasing production.
- The diesel fuel subsidy will be progressively reduced to 40% of the 2014 amount by 2019, with the funds shifted to fisheries resources conservation, vessel modernisation and infrastructure.
- Artificial restocking, artificial reefs and seasonal closures are the main measures used for restoration of fish stocks.
- Distant water fisheries are the main source of growth in capture fisheries landings, while aquaculture is the main source of growth in total fish production.

Fisheries and aquaculture statistics in China

Value of production

in global context

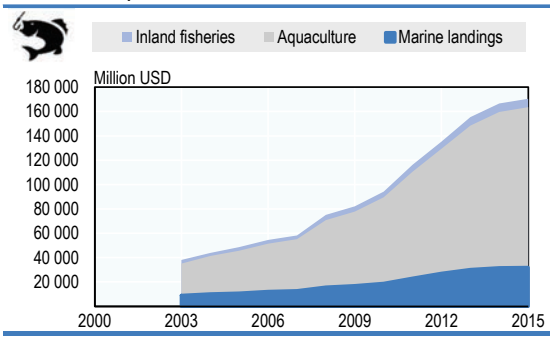
USD 170 474 million
Total value of fisheries and aquaculture

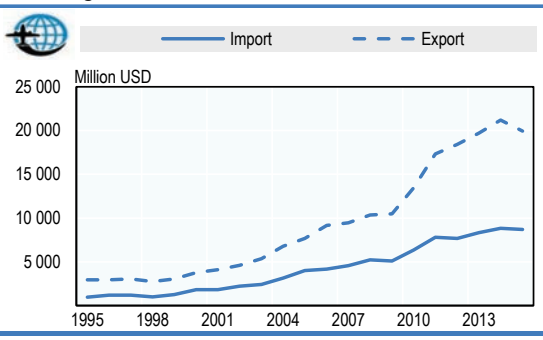
32.0%
Share of global fisheries landed value

61.2%
Share of global aquaculture production value

Trends in production value and trade

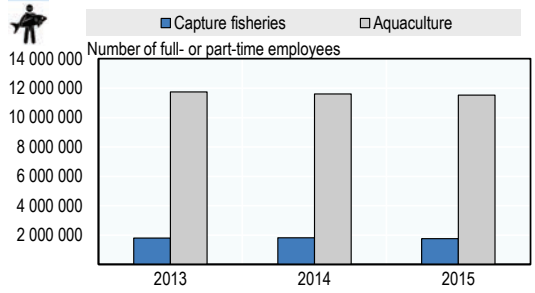
Total production value in USD increased at an annual average rate of 10% between 2011 and 2015

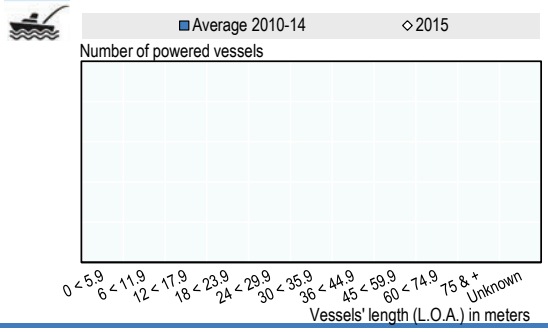




Employment and fleet

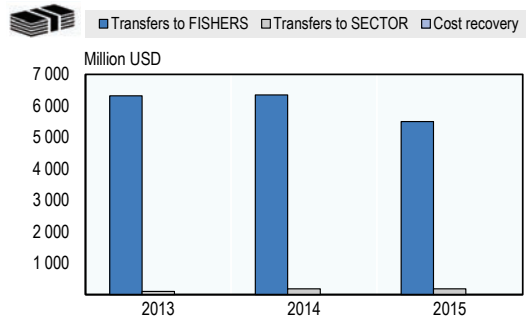
Employment in capture fisheries decreased by 3.5% between 2014 and 2015 to 1 753 618 persons

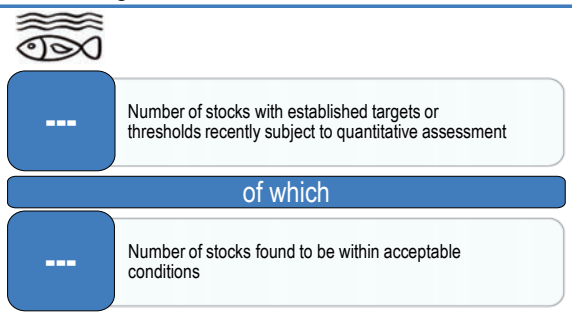




Government support and resource management

2% of total budgetary support was directed to management of resources in 2015





Note: Reference year is 2015.
Source: OECD Fisheries Database. World's total values of production for catch and aquaculture were sourced from the *FAO Yearbook, Fishery and Aquaculture Statistics, 2015*. Both numbers have been corrected adding the value of seaweed production; aquaculture has also been adjusted to account for the value of Chinese production reported to the OECD. Data on aquaculture production were sourced from the China Statistical Yearbook 2016; differences with FAO total figures are under review. 2015 budgetary support data have been estimated using 2014 values.

Policies and policy-making

The 13th five-year plan (2016-2020) focuses on sustainable management, improved product quality and an optimised industry structure

The 12th five-year plan ended in 2015. The 13th five-year plan (2016-2020) for fisheries development has come into effect and provides the main policy directions for fisheries[1]. It sets out policies for the "transformation and upgrading" of the fisheries sector, which means accelerating the reform of fisheries management and providing a new industrial policy for the structure of the sector.

Objectives under the transformation element of the plan include:

- Shifting from the former approach of increasing landings and production to sustainable resource use. The introduction of output controls in the form of Total Allowable Catch (TAC) is a priority.
- Transforming aquaculture practices from a focus on quantity to quality, with "healthy aquaculture" as a final goal.
- Changing the target of policy from individual fishers to the fisher community as a whole to better guide the development of new technologies, products and markets.

Areas targeted for upgrading the fisheries sector include:

- An optimised regional layout that takes into account regional resources and ecological features. Priorities are the development of the distant-water fishery, intensive aquaculture and the processing industry in coastal areas where new technologies are transforming the sector. Priority will also be given to standardised healthy aquaculture and integrated aquaculture along the Yangtze and Zhujiang rivers where there is an abundance of freshwater resources.
- Ensuring that aquaculture species produced are desired by the market.
- Structuring the fisheries industry to co-ordinate development of aquaculture, capture fisheries, processing, the recreational fishery, and stock enhancement; the five pillars of the fishing industry. Aquaculture outputs are planned to consistently increase in both quantity and as a share of total aquatic outputs. Sustainable aquaculture is a priority for development. Priorities in the capture fishery are strict control over the number and power of fishing vessels, reducing illegal, unregulated and unreported (IUU) fishing, improving and modernising vessel equipment and reducing the energy consumption and emissions of vessels. The processing industry will see some industrial clusters established in coastal areas and the middle-and-lower Yangtze River. The management and legal system supporting the recreational fishery needs to be improved in order to secure the potential economic benefits of this activity. Stock enhancement activities are expected to help conserve fisheries resources in the long run.

In March 2013 "The State Council's Suggestions on Enhancement of Marine Fisheries Sustainable and Healthy Development" was issued, which declared marine fisheries as a national strategic industry. Local governments responded by producing policy documents to support the development of modern marine fisheries and providing financial support to the sector. The new policy gives priority to resources conservation and environment protection and not just to fisheries development.

Controlling the number of fishing vessels is one of the primary means of control. Fishing vessels must have a licence to access fishing grounds. With licensed fishing, the TAC is

translated into an individual quota (IQ). Seasonal closures and area closures are regular practice for most important inland fishing grounds and almost all the coastal grounds, with a view to controlling total catch volume and helping fish stocks recover. For example, a seasonal closure has been applied to East China and Yellow Seas since 1995, and the South China Sea since 1999. Destructive fishing methods are prohibited. Fees collected from those who benefit from fishing are used to restore fisheries resources and for environment protection.

Control over fishing gears and vessels has been further strengthened. For example, Zhejiang province has initiated a campaign to eliminate illegal fishing gears according to the "Regulations on the Prohibition of 13 Unregulated Fishing and the Use of Fishing Gears with Minimum Mesh Size", as well as fishing vessels that do not possess inspection certificates, registration certificates, or fishing licenses (referred to as the "3 non-compliances"). By the end of 2015, about 16 000 fishing vessels had been banned and about 550 000 fishing gears confiscated throughout the country.

The Fisheries Law provides the legal framework for fisheries management. Since it came into force in 1986, the law has undergone four amendments, in 2000, 2004, 2009 and 2013. Further amendments were still under development in 2015. Suggestions for changes were collected by conducting investigations, surveys and symposia where policy-makers, industries and scientists had a chance to provide input.

Aquaculture development has been rapid in the past, and the current policy focus is on addressing some of the challenges the sector faces as it seeks sustained future growth. The challenges faced by the sector include limited farming space, a degraded resource base and scattered small-scale farms. A new development paradigm based on quality and sustainability is seen as necessary for the future.

Government policy for aquaculture sustainability is based on the objectives of high efficiency, a higher degree of integration, sustainability, good quality, ecological health, green growth, and safety. Implementing new technologies, a shift from extensive to intensive aquaculture and more energy-efficient production are key elements.

Government support is being redirected towards reducing the number of fishers and fishing vessels, along with modernisation of gear and vessels

Central government expenditures on fisheries infrastructure amounted to RMB 15.75 billion (USD 2.37 billion) during the 12th five-year plan period, a more than four-fold increase from the 11th five-year plan period (2006-2010). Since the implementation in 2013 of the policy to encourage fishers to leave the sector and take up other occupations, the central government has devoted RMB 1.35 billion (USD 200 million) to 74 164 fishers' households, which has helped smooth the transition of fishers to other work and stabilised fishing communities. Budgetary support to the fisheries industry totalled RMB 129 billion (USD 19.4 billion) during the 2010-15, a record amount and a 154% increase from the previous five-year plan period.

The most significant change is for the subsidy for diesel fuel for fishers. The diesel fuel subsidy was put in place after a sharp price rise in 2006. The subsidy was distributed according to the power of the fishing vessel. However, with the new priority for fisheries resources conservation and control over fishing effort, changes have been made to the subsidy policy since 2015. The fuel subsidy is now planned to be reduced to 40% of its 2014 value by 2019. As indicated in recent government policy guidance in 2015, these funds will go to fisheries resources conservation and equipment and infrastructure

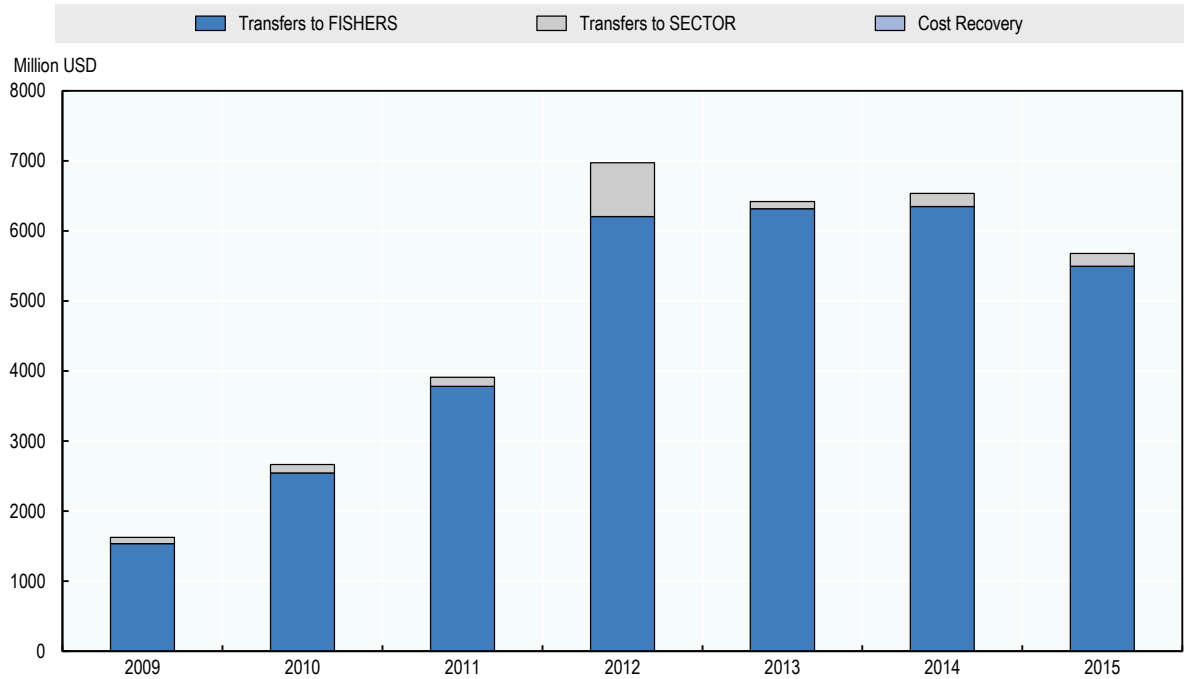
construction, instead of diesel fuel, to enhance fishery sustainability in the long run. The value of this fuel subsidy was estimated to be RMB 35 billion (USD 5.3 billion) in 2015 and represents more than 95% of all support provided to individual fishers in the FSE (Figure 4.11).

An annual subsidy of RMB 4 billion (USD 600 million) has been established in the 13th plan for decommissioning of fishing vessels, gear replacement, transformation and renovation of vessels, navigation marks at fishing harbours, and fisheries resources conservation.

In 2015 a total of RMB 3.7 billion (USD 560 million) of central government funding was devoted to fisheries development, of which RMB 1.1 billion (USD 170 million) was dedicated to the conservation of fisheries resources and healthy aquaculture, and RMB 2.6 billion (USD 390 million) for infrastructure, a large share of which was for the standardisation of aquaculture ponds. Some financial support was also provided for fisheries mutual insurance to help fishers deal with risks in their operations.

Science and technology are seen as playing a key role in fisheries development. A total investment of RMB 2 billion (USD 300 million) is allocated for research and development. This investment has led to progress in areas like integrated aquaculture in rice fields, energy-savings and emission-reduction in the aquaculture industry, industrial aquaculture with recirculated water system, and emission-reduction in industrial water recirculating pond aquaculture and cage aquaculture.

Figure 4.11. Budgetary support to fisheries in China, 2009-15



Source: OECD Fisheries Database. 2015 budgetary support data have been estimated using 2014 values.

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Artificial restocking, artificial reefs and seasonal closures are common measures adopted for environmental restoration

The two important regulations for fisheries resources conservation and environment protection are the "Action Plan for Aquatic Resources Conservation in China" and "The State Council's Suggestions on Enhancement of Marine Fisheries Sustainable and Healthy Development". A combination of good regulations and government support lead to effective conservation and protection of resources.

Artificial restocking, artificial reefs and seasonal closures are some common measures adopted for ecosystem restoration and enhancement. New reserves to protect the genetic diversity of natural resources are set up every year. Efforts to better measure fisheries stock status and identify spawning grounds continue to improve. Marine ranches are also being established for resource conservation and environment protection.[2] Twenty demonstration marine ranches have been established in 2015, with more planned in the future based on lessons learned from these.

A joint project of the Ministry of Agriculture and Ministry of Environment Protection, "2014 Bulletin of China's Fishery Ecological Environment" was released, which collected comprehensive data concerning environment dynamics. In 2015, The Fishery and Fishery Administration Bureau set out a plan to monitor and assess important marine and fresh water.

International fisheries co-operation has been strengthened

International fisheries co-operation is viewed as one component of the "The Belt and Road Initiative" established in 2013. The primary objective of fisheries co-operation is to ensure food security and fulfil the fisheries development strategy. One priority is the defence of fisheries rights and interests against competing claims and the maintenance of

Sino-Russian fisheries co-operation has been enhanced in 2015 with more quota offered to China in waters of the Russian Federation and joint efforts in carrying out fisheries resources investigation in the Heilongjiang and Wusuli rivers. The Sino-Russian online verification system for custom clearance certificates for aquatic products with legal origins has been implemented, which greatly facilitates the fisheries trade between two countries. Sino-USA fisheries dialogues have led to a mutual understanding of fisheries sustainability, combatting IUU fishing, and protection of aquatic wildlife. Sino-European dialogues in 2015 have resulted in agreement on the establishment of a joint working committee for combating IUU fishing and ensuring the smooth flow of Chinese marine capture products to European markets.

To fulfil its obligation as a responsible fisheries power and actively participate in international fisheries co-operation, China has joined several regional fisheries management organisations (RMFO). Between 2011 and 2015, China ratified the "Convention on Fisheries Resources Conservation and Management in the South Pacific High Seas", "Convention on Conservation and Management of Inter American Tropical Tunas", and "Convention on Conservation and Management of Fisheries Resources in the North Pacific".

Health of the sector

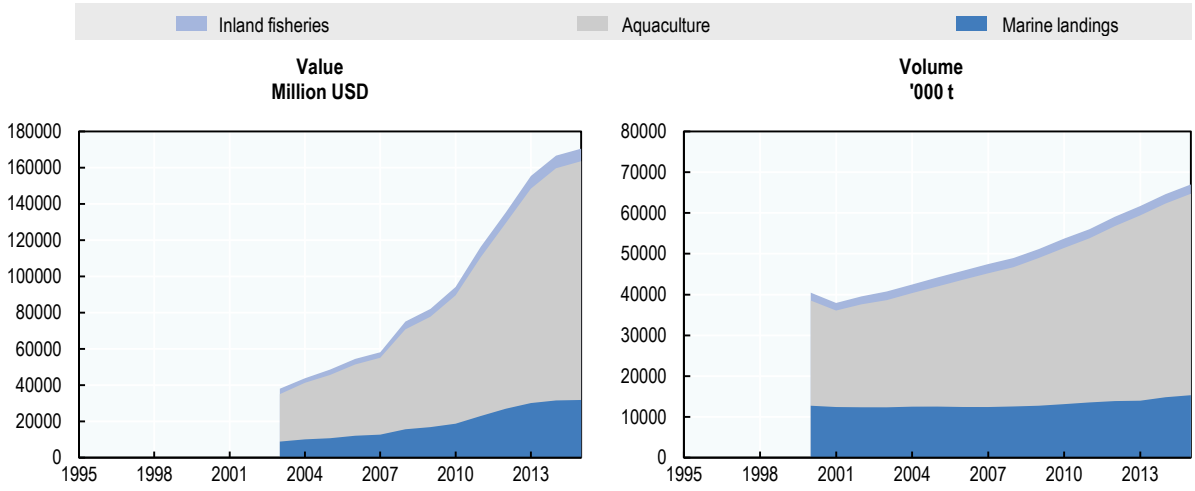
Aquaculture is the main source of growth in fish production

The total value of marine landings in 2015 was RMB 200.3 billion (USD 31.9 billion). Capture fisheries production value increased at annual average rate of 7.7 % between 2011 and 2015, but growth has slowed considerably after 2013 (Figure 4.12). The total value of aquaculture output in 2015 was four times that of marine landings, at RMB 827.4 billion (USD 131.7 billion). Aquaculture production value increased at annual average rate of 10% between 2011 and 2015. This figure is substantially higher than previous estimates and may be explained by revised price data.

Sustainability is now the policy objective for aquaculture development. 49.38 million tonnes of fish products were produced through aquaculture, of which 62% was from freshwater operations.

1.75 million people were employed in the fishing sector in 2015, and 11.5 million in aquaculture. While aquaculture employment has grown steadily, employment in fisheries has fluctuated in a range between 1.74 million and 1.86 million since 2000.

Figure 4.12. Fisheries and aquaculture production in China, 2000-15



Note: Aquaculture and inland fisheries volumes are expressed on a live weight basis; marine landings in landed weight. Volumes reported provide an indication of production magnitude and trend. Data may be heterogeneous and not directly comparable.Production data are incomplete. More information is available in the OECD Fisheries Database.
Source: OECD Fisheries Database. Data on aquaculture production were sourced from the China Statistical Yearbook 2016; differences with FAO total figures are under review.

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The distant water fishery is the main source of growth in capture fisheries landings as the inshore and freshwater fisheries are exploited to their maximum

In 2015, capture fisheries production from freshwater was 2.28 million tonnes, inshore was 13.15 million tonnes, and distant water was 2.19 million tonnes. Freshwater production has stabilised at about 2.2 million tonnes for the last ten years, and there does not appear to be any scope to increase this given the limits of the resource base.

Production from inshore fishing has also been stable in recent years. Most inshore fishing is carried out as trawling, purse netting, drift netting, and trap netting. The primary fishing targets for inshore fishing are anchovy, carangid, little yellow croaker and mackerel. Inshore catches tend upwards after seasonal closures, an indication that restoration measures for fisheries resources are in some way effective. Measures taken to conserve inshore fisheries resources include restoration of inshore fisheries habitat and restocking of important inshore fisheries species.

The distant-water fleet has been increasing production, mainly due to the increase in the number of vessels. Distant fishing grounds involve the exclusive economic zones (EEZ) of about 40 coastal states and the high seas in the Pacific, Indian, Atlantic and Antarctic Oceans. Distant-water capture production was 2.2 million tonnes in 2015, contributing 12.4% of total capture.

In 2015, the export-oriented processing industry faced difficulties due to factors including weak external demand, fluctuating currency exchange rates and unfavourable price changes. However, the domestic processing industry has been performing relatively strongly due to strong demand. Commercialising research and development for freezing and refrigerating, deep processing and value-added processing is a priority to increase quality and added value of processed products. Processing industry clusters are highly encouraged to achieve a smooth flow from raw material processing to marketing. Developing human resource capacity is a part of this.

Trade in aquatic products experienced a slight downturn in 2015. The export volume was 4.06 million tonnes, a decrease of 2.5% from 2014, and the export value was RMB 125.23 billion (USD 20.3 billion), a decrease of 6.3% from 2014. The import volume was 4.08 million tonnes, a decrease by 4.7% from 2014 and the import value was RMB 59.32 billion (USD 9 billion), a decrease by 2.2% from 2014. The trade downturn, the most severe in the past 20 years, is the result of external factors such as reduced consumption due to the global economic crisis and as well as internal factors such as a structural surplus in certain products and rising production cost. Despite the reduced trade volume and value, China remains the largest trader of aquatic products.

In 2015, the most important export destination was Japan, which imported 605 600 tonnes aquatic products worth RMB 22.87 billion (USD 3.6 billion), followed by the United States, ASEAN countries and Europe. The leading export items were the molluscs (cuttlefish, squid and octopus), shellfish, prawn, and tilapia.

The most important sources of imports are the Russian Federation, United States, Peru and ASEAN countries, with volumes of 882 300 tonnes, 531 700 tonnes, 677 000 tonnes and 518 000 tonnes respectively, with a total value of RMB 8.16 billion (USD 1.3 billion), RMB 8.2 billion (USD 1.3 billion), RMB 8 billion (USD 1.2 billion) and RMB 6.72 billion (USD 1.1 billion) respectively.

Institutions and authorities

Fisheries administration departments are set up at national, regional, provincial and municipal levels. The Fishery and Fishery Administration Bureau within The Ministry of Agriculture has main responsibility for fisheries management, policy, data collection and adjusting the structure of the fisheries sector.

There are 12 divisions within Fishery and Fishery Administration Bureau, they include:

- General Division
- Policy and Law Division
- Planning and Finance Division
- Fisheries Monitor and Market Processing Division
- Technology and Quality Supervision Division
- Aquaculture Division
- Fishing Vessel and Gear Management Division
- Distant Fisheries Division
- Resources and Environment Protection Division
- International Co-operation Division
- Fisheries Administration Division
- Safety Monitor and Emergency Service Division

There are areas-specific fisheries administrations at regional, provincial, and municipal levels, whose responsibilities correspond with the responsibility framework of Fishery and Fishery Administration Bureau.

There are also other important government institutions for different fisheries missions.

- **Bureau of Fishing Vessels Inspection** makes regulations on fishing vessels inspection and conducts legal and technical inspections of fishing vessels.
- **Chinese Academy of Fishery Sciences** is the governmental scientific institution dedicated to promoting excellence in fisheries sciences. The academy's primary responsibilities are to conduct basic and application fisheries research, and high and new-tech industrial development research. In total, the academy has 9 fisheries research institutes and 4 fisheries resources enhancement stations throughout the country. In terms of sea areas, it has 3 institutes, and they are Yellow Sea Fisheries Research Institute in Shandong province, East China Sea Fisheries Research Institute in Shanghai, and South China Sea Fisheries Research Institute in Guangdong province. Moreover, 4 of its stations specific for marine resource enhancement research are located in Hebei province, Shandong province, Liaoning province, and Shandong province respectively. In terms of water valleys, it has Heilongjiang Fisheries Research Institute in Helongjiang province, Yangtze River Fisheries Research Institute in Hubei province, Pearl River Fisheries Research Institute in Guangdong province, and Freshwater Fisheries Research Center in Jiangsu province. In terms of engineering, it has Fishery Machinery and Instrument Research Institute and Fishery Engineering Research Institute, located in Shanghai and Beijing respectively. The academy plays an influential role in national fisheries science and policy making, meanwhile it supports developments in fisheries engineering and technology in a wide range of ways.
- **National Fisheries Technology Extension Station** is the governmental agency dedicated to the implementation of policies concerning fisheries technology

extension and supervision of fisheries technology extension. Priority missions for the station in 2015 are listed as follows: demonstration and extension of healthy aquaculture technology, disease forecast and control, supervision of aquaculture health and aquaculture products safety, sharing of fisheries public information, fishers training, aquatic living resources conservation, development of aquaculture species, recreational fishery, and international fisheries technology exchanges.

There are some important fisheries organisations in China, and they are:

- China Fisheries Society,
- China Fisheries Association,
- China Aquatic Products Circulation and Processing Association,
- China Fishing Vessels and Fishery Machinery Association,
- China Fishery Mutual Insurance Association, and
- Recreational Fishing Association.

These organisations are dedicated to specific fisheries missions, and endeavour to provide information and service to fisheries individuals and communities.

During the 12th five-year plan period (2011-2015), The Ministry of Agriculture co-ordinated cross-sector co-operation in the enacting and amendment of a variety of laws relevant to fisheries, such as "Laws of Wild Life Conservation", "Laws of Marine Environment Protection", "Laws of Food Safety", "Laws of Wetland Protection", "Regulations of the Supreme People's Court on Several Issues concerning the Application of Laws Relevant to Fisheries".

Notes

[1] In China "fisheries policy" generally refers both to fisheries and aquaculture, and this convention is followed here.

[2] Marine ranches are marine areas where artificial restocking and systematic management will be conducted, and large-scale fisheries facilities will be used. Marine ranches are artificial fishing grounds where artificially released species grow in a natural marine environment.