

Marine economy surging in Qingdao

By ZHAO RUIXUE

Rapidly developing and increasingly valuable, Qingdao's marine economy has evolved into a mainstay of the coastal city in Shandong province.

"Qingdao will make good use of the marine wealth and advantages provided by research to develop a sound and beneficial marine economy," Zhang Yuanfu, vice-mayor of Qingdao, told China Daily.

Zhang predicted that total revenues from marine economy – including fishing, aquatic cultivation, offshore oil, shipping, shipbuilding and

marine environmental protection – will reach 127 billion yuan this year.

The marine economy had strong momentum over the past five years, increasing 20 percent on average each year.

According to the 11th Five-Year Plan (2006-10) for the city's marine economy, its total production value will hit 210 billion yuan in 2010, accounting for 19 percent of the city's gross domestic product.

Qingdao has laid plans to be a top marine economy in China through rapid and healthy growth in technology research, shipping, fishing, offshore oil production and shipbuilding.

To improve environmental protection for its surrounding ocean, the city has invested 660 million yuan in the past five years to treat effluent produced along the coastline.

More than 17 million yuan was spent on enhancing the environment of Jiaozhou Bay, including establishment of

a number of marine nature reserves.

The city has also improved its capacity to monitor water quality to maintain a sound maritime environment.

The city's efforts paid off. It was awarded with a top national prize for marine protection in 2006.

The busy shipping hub of Qingdao port now has trade links with more than 450 ports in some 130 countries and regions.

Total throughput of Qingdao port reached 265 million tons in 2007 as a record-high 9 million TEUs (20-foot equivalent units) were handled. Its volume in containers, crude oil and ore were among the top three in China.

Grasping the opportunity presented by the upcoming 2008 Olympic Games, the city has rapidly developed its coastal tourism. Last year it hosted more than 30 million visitors.

In a bid to expand the mar-



Staff of the Qingdao Ocean and Fishery Bureau release fish fry into the sea to help restore fisheries.

ket for its seafood at home and abroad, the city has adopted more advanced approaches to fishing. Its seafood is now exported to more than 30 countries and regions including South Korea and Japan. Total revenues from seafood

exports exceeded 1.5 billion yuan in 2007.

Shipbuilding, marine-based biological pharmaceuticals and new materials developed from the ocean and seabed have also seen rapid development. By 2010 Qingdao is

expected to have an annual shipbuilding capacity of 2 million tons.

The city now desalinates and uses 885 million cu m of seawater annually. Its comprehensive use of ocean resources makes it a model in the nation, according

to Qingdao officials.

More than 300 hi-tech enterprises engaged in marine biological pharmaceuticals, seafood and marine-based new materials are now a driving force for the city's marine economy.

This special supplement is co-published by the Information Office of Qingdao municipal government and China Daily



A seafood nursery in Qingdao.

Aquaculture and fishing spawn robust revenues

By DU SHU

Qingdao's fishing and aquaculture have developed rapidly in recent years to become crucial to the city's marine economy.

"Qingdao will accelerate modernization of the industry and make it a mainstay," Huang Yusong, director-general of Qingdao Ocean and Fishery Bureau, told China Daily.

According to the 11th Five-Year Plan (2006-10) for Qingdao's marine economy, the total production value of the fishery industry will reach 25.8 billion yuan by 2010, when annual average per capita net income of those harvesting and fishing will hit 11,000 yuan.

Huang said last year's total catch and aquaculture production was about 1.4 million tons that generated revenues of 18.48 billion yuan.

Harvests of cultivated seafood and other marine organisms totaled 884,800 tons, some 61 percent of the total aquatic production in 2007.

Products include fish, prawns, sea cucumber and abalone.

The industry's rapid growth has also brought prosperity to processors. Qingdao is now home to more than 1,800 processing firms that have combined revenues of more than 8 billion yuan annually.

Import and export of aquatic products is also expanding, rising to 916,000 tons last year with a total value of \$1.5 billion.

To maintain stable development, the city's aquaculturists enlarged their breeding program last year by releasing 27 billion fry, including tiny sea cucumbers, prawns, turbot, abalone and clams.

Since 2007, 38 million prawn fry and 12.2 million jellyfish fry have been released into the Yellow Sea to help restore fisheries.

The industry is also drawing overseas investment. In 2007, 37 foreign-funded fishery enterprises were established with total investment of \$190 million, an increase of 57 percent over the year before.

Research tapping the ocean's bounty

By ZHANG YING

Qingdao's capacity in marine science and research is opening a wide range of opportunities to further harness the ocean's resources.

"The city's leading position in China's marine science provides more advantages for future prosperity," said Zhang Yuanfu, vice-mayor of Qingdao.

After the National Center for Ocean Research was established in Qingdao last August, construction began in the first half of this year on a 1 billion yuan National Marine Laboratory.

The lab will be the most advanced of its kind in China and will rank among the top marine science research institutes in the world, Zhang said.

Qingdao already has widespread advantages in marine science and technology through 28 marine research and education institutes, including

Qingdao University, the Institute of Oceanology under the Chinese Academy of Sciences, 12 State-level laboratories and six provincial-level labs.

The city has more than 40 percent of the country's top marine experts, including 16 academicians with the Chinese Academy of Sciences and Chinese Academy of Engineering, as well as a team of more than 7,000 engineers and technicians.

The local government has invested 130 million yuan in the past three years to support marine research, personnel training and transfer of scientific and technological results into production.

Advantages in new and hi-tech marine products have also resulted.

Revenues from emerging hi-tech industries like marine chemistry, marine-based pharmaceuticals and new materials developed from the ocean and seafloor reached over 20 billion yuan in 2007.

Advantageous fields

The city has shown its technical power in such fields as marine breeding, marine biotechnology, marine-based medicine development, marine anti-corrosion technology and marine engineering.

The marine medicine industry is now rising as another new area of the city's economic growth. Increasing numbers of famous enterprises and groups in the city are developing marine medicines.

Qingdao Growful Medicine Co Ltd has invested 700 million yuan to build a marine medicine industry park, which is expected to yield an annual sales revenue of 1.25 billion yuan when it becomes operational.

Sanju Bio-Pharmaceutical Industry Park, jointly constructed by Sanju Medical and Pharmaceutical Co Ltd and Ocean University of China, recently started construction.

With a total investment of 2 billion yuan, the 1 sq km

industry park will become an important production and technology center for China's marine biological products.

Together the projects are expected to lead China's marine medicine industry in the near future.

Marine-based new materials are also providing an additional revenue stream. An official from Qingdao Science and Technology Bureau said the city currently produces 9,500 tons of sodium alginate each year, accounting for 33 percent of global production, the most in the world. Its annual 7,000-ton output of the compound manitol used in pharmaceuticals is the largest in China.

Qingdao's annual marine science and technology products were valued at 15.22 billion yuan, 17.6 percent of the revenue generated by all its marine industries.

Emerging industries

Another industry directly benefiting from Qingdao's

capacity in marine sciences is seawater desalination, which supplies about 2.4 million cu m of fresh water a day.

The value of desalinated water was 1.95 billion yuan in 2006, an increase of 39.5 percent over the previous year.

To further strengthen its capacity the city government will enhance its support in building the National Center for Ocean Research and establish a public service institute for marine science and technology.

The local government and related institutes will also foster more skilled professionals in marine biotechnology, marine engineering, shipbuilding, marine information technology and marine chemical technology.

"It is our top priority to cultivate more qualified marine personnel and to transfer more scientific and technological results into production," noted Professor Wu Dexing, president of Ocean University of China.

Weather and water data system set for Games

By HUANG YANHONG

Among all Olympic events, sailing is the most affected by weather. Even slight changes in wind direction, speed or wave height can have great impacts on the outcome of a competition.

Qingdao, sailing venue for the 2008 Olympic Games, recognizes the crucial need to supply accurate meteorological and hydrologic data to competing athletes.

At the meteorological and hydrologic office of the Qingdao Olympic Sailing Center, advanced monitoring instruments are now operational, supplying instantaneous information on temperature and wind strength and direction.

The monitoring and forecast center

was tested by when it provided precise meteorological services for the 2006 and 2007 Qingdao International Sailing Regatta and the 2008 Qingdao International Association for Disabled Sailing regatta.

"All the information will be released strictly according to the meteorological information forecast standards established by the Olympic Sailing Committee," said Lin Hang, head of the meteorological and hydrologic center.

With the help of four buoy stations fixed in competition areas, accurate forecast information will be sent by TV, radio and the Internet and posted on public billboards.

Timely and accurate instant meteorological data greatly aids sailors in their strategies, Lin said.



Monitoring buoys now gauge sea conditions at the Olympic sailing site.



A sailor from the Italian team after a training session.

Ju Chuanjiang

Games loom as sailors train

By SHAN DONG

Preparations for the 2008 Olympic Games are in full swing in Qingdao as the world's biggest sporting event approaches.

With less than two months to go before the Games, teams from home and abroad have already arrived in the port city to prepare for the Olympic Sailing Competition.

Including China, 34 teams with about 300 athletes and coaches are now training at Qingdao's Yinhai International Yacht Club.

As the sky cleared after several foggy days, competitors got busy familiarizing themselves with the course and adapting to the environment in preparation for the Games.

"It is really hard to improve further now since it is so close to the Olympics," said Hu Xian-

qiang, a member of the Chinese team.

"What we can do now is to find out our shortcomings by contrasting with other teams," Hu added.

It is now a foggy and changeable season in Qingdao, so athletes are also surfing in another way – on the Internet for weather information.

"We will not have to worry about the weather during the Olympic Games since meteorology services will be then provided by the sailing center," Hu said.

Zach Railey, a member of the US team, said he was satisfied with the weather and his training. "Water conditions are good. The wind is perfect at 6 or 7 knots."

Not so for German athlete Petra Niemann, who told China Daily that she likes strong wind.

Unlike some athletes who are circumspect about their chances in the coming Olympics, Niemann has a clear answer.

"Of course I hope to win a medal," she said.

"To get selected for the Olympics is really exciting," said Spanish sailor Marina Alabau. "Sure I will do my best during the Games."

"I have been here for six days, and every day I train to make sure that I am in optimum condition."

Alabau said it is her third time in Qingdao. "I like the food here. It is totally different from my country, but I like it."

The teams will stay in Qingdao for 15 days, then fly Europe for competitions and return to Qingdao around mid-July for final Olympics preparations.