



# Science and Technology Innovation Development in Guangdong-Hong Kong-Macao Greater Bay Area on the 40th Anniversary of Reform and Opening-up

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# Guangdong-Hong Kong-Macao Bay Area



The Guangdong-Hong Kong-Macao Greater Bay Area refers to the regional and municipal cluster composed of 9 cities of Guangdong Province. They are Guangzhou, Shenzhen, Zhuhai, Foshan, Zhongshan, Dongguan, Zhaoqing, Jiangmen, Huizhou, and two special administrative regions, Hong Kong and Macao.



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**/01**

# **Development and Change of Guangdong, Hong Kong and Macao**





Qianhai Bay of Shenzhen



## 40 Years' Development of Guangdong, Hong Kong and Macao

Area	Guangdong		Hong Kong		Macao	
Year	1978	2017	1978	2017	1978	2017
<b>Per Capita GDP ( USD )</b>	236	11922	3923	44999	3054	79564
<b>Population ( Million CNY )</b>	50.6415	109.99	4.667	7.392	0.2352	0.6226
<b>Revenues ( Billion CNY )</b>	3.95	1131.5	101.4	490	0.486 ( Year 1980 )	78.552
<b>R&amp;D Input ( Billion CNY )</b>	0.229 ( Year 1988 )	234.363	6.59 ( Year 1995 )	50 ( 2018 )	—	0.47 ( Year 2015 )

**/02**

**Development Status of Science  
and Technology in Guangdong-  
Hong Kong-Macao Greater Bay  
Area**



# 《深化粵港澳合作 推進大灣區建設框架協議》 簽署儀式

Signing Ceremony of the Framework Agreement on  
Deepening Guangdong-Hong Kong-Macao Cooperation in the Development of the Bay Area  
香港 Hong Kong • 1.7.2017



★ In 2003, the Hong Kong/Guangdong/Macao Science and Technology Cooperation Special Team was set up under the Hong Kong/Guangdong/Macao Cooperation Joint Conference, accelerating the High-tech cooperation and S&T transformation of three regions.

★ "The Framework Agreement on Deepening Guangdong-Hong Kong-Macao Cooperation in the Development of the Bay Area" was signed on Jan. 7, 2017

★ 15<sup>th</sup> Plenary of the Hong Kong/Guangdong/Macao Science and Technology Cooperation Special Team was held on Aug. 31, 2018

## The Comparison of the Guangdong - Hong Kong - Macao Greater Bay Area and the World's Three Bay Areas

Index (2015)	The Guangdong-Hong Kong-Macao Greater Bay Area	Tokyo Bay Area	San Francisco Bay Area	New York Bay Area
Population (Million)	66.71	43.47	7.15	23.4
GDP (Trillion USD)	1.5 (Year 2017)	1.8	0.8	1.4
Per Capita GDP (USD)	20,400	41,400	111,900	59,800
Area Covered (Thousand km <sup>2</sup> )	56	36.8	17.9	21.5
Port Handling Capacity (Million TEU)	65.2	7.66	2.27	4.65
Airport Passenger Throughput (Million Person-Time)	175	112	71	130
The proportion of Tertiary Industry (%)	62.2	82.3	82.8	89.4
Number of the World's Top 100 Universities	5 (Year 2017)	2	3	2
Number of World's Headquarters of Fortune 500 Enterprises in the World	18	60	28	22

# Guangdong-Hong Kong -Macao Greater Bay Area has the strong innovation power to build Global Science and Technology Innovation Center

## Science and Technology Innovation Elements

- In 2017, the total economic gross of the Guangdong-Hong Kong -Macao Greater Bay Area had reached **CNY 10 trillion**.
- The number of **R&D personnel** in the Guangdong-Hong Kong-Macao Greater Bay Area reached **680,000** .  
The number of R&D scientists and engineers reached **450,000 per year**.  
Over 130,000 overseas experts come to work in Guangdong Province every year.
- The **S&T educational resource** of Guangdong-Hong Kong-Macao Greater Bay Area **rank No. 3** in China.  
There are **5 universities** in the **world top 100** ranking.
- There are **8 national key S&T projects**, like National Supercomputer Center in Guangzhou, China  
National Gene Bank in Shenzhen, Chinese Spallation Neutron Source in Dongguan, etc.
- There are **41 State Key Laboratories** in Guangdong-Hong Kong-Macao Greater Bay Area . Guangdong is starting 4 Provincial Key laboratories
- There 43 academicians of the Chinese Academy of Sciences and and 44 Chinese Academy of Engineering in Guangdong and Hong kong.

## Guangdong-Hong Kong -Macao Greater Bay Area has the strong innovation power to build Global Science and Technology Innovation Center

### The output of S&T innovation is constantly emerging.

- From 2012 to 2016, the number of patent applications for inventions in the Guangdong-Hong Kong - Macao Greater Bay Area was 59,110, 67,269, 72,601, 98,672 and 149,234 in succession. In the past five years, the number of patent applications for inventions has doubled.
- In 2017, the number of **PCT patent applications** in Guangdong Province reached **26,830**, accounting for 55% of the nation's total, leading for 16 consecutive years.
- In 2017, the number of standard patent applications in Hong Kong was **13,299**, granted **6,671**.
- In recent 3 years, Guangdong Province total won 102 National S&T Awards.

## Guangdong-Hong Kong -Macao Greater Bay Area has strong innovation power to build Global Science and Technology Innovation Center

### **S&T specialized industries basically set up.**

- There are **18 Fortune 500 Enterprises** in the Guangdong-Hong Kong -Macao Greater Bay Area , over half of the Fortune 500 Enterprises establish Greater China Headquarters in Hong Kong. And there are **33,000** National-level High and new technology enterprises in Hong Kong also.
- A new generation of mobile communications, flat panel display, high-end software, semiconductor lighting, biomedicine and other strategic emerging industrial clusters with **output value of over 100 billion CNY** have been formed.
- Guangzhou and Shenzhen have strong S&T innovation industrial bases. The manufacturing clusters in Foshan and Dongguan are intensive.
- Outstanding advantages in international finance and modern service industries of Hong Kong.
- Developed leisure tourism and other services industries of Macao.

**/03**

**Prospects for Science and  
Technology Innovation and  
Cooperation in Guangdong-Hong  
Kong-Macao Greater Bay Area**



## Orientation of Guangdong, Hong Kong and Macao

**Guangdong :** Become the **strong province of S&T innovation** and **international S&T industry innovation center**.

**Hong Kong :** Newly input 50 billion HKD, building Hong Kong into an **international center for science and technology innovation**.

**Macao :** Promote the construction of **international tourism and leisure**, build a **business and trade cooperation service platform** between China and Portuguese-speaking countries, and strive to build an exchange and cooperation base with Chinese culture as the mainstream and multi-cultural coexistence.



**To study and formulate institutional mechanisms to address the restraints on the current in-depth cooperation in science and technology between Guangdong, Hong Kong and Macao**

- ◆ **To study and solve the problems of mutual funding and transit management of S&T research funds in the three regions, and put forward effective methods for fund management. At present, the cross-border allocation of national research funds has made a successful breakthrough, and the relevant policies and measures for the allocation of provincial science and technology projects funds to Hong Kong and Macao are being further promoted.**
- ◆ **Solve the tax problem of cross-border high-level innovative human resources, explore appropriate policies and measures in tax revenue and tax balance, and stimulate the inner vitality of innovative human resources participating in S&T research in the three regions.**





To study and formulate institutional mechanisms to address the restraints on the current in-depth cooperation in science and technology between Guangdong, Hong Kong and Macao

- ◆ To study and solve the main obstacles to the **convenient exchange of innovative human resources** between Guangdong, Hong Kong and Macao and the problems of co-cultivation , formulate reasonable measures, and effectively solve the practical difficulties existing in the cross-border residence and employment.
- ◆ **solve the tariff problem** of importing S&T research equipment between Guangdong, Hong Kong and Macao, and to put forward reasonable arrangements and management measures. Promote the **barrier-free circulation** of S&T elements in Guangdong, Hong Kong and Macao through opening and sharing.
- ◆ Explore the implementation of international Internet policy in some areas, to provide **policy convenience** for overseas innovators, and to effectively solve the problems of information asymmetry, inconsistent standards and inconsistent data transmission and sharing policies of innovative resources.



## Implementing the Action Plan of Science and Technology Innovation in the Guangdong-Hong Kong-Macao Greater Bay Area

- ◆ Implement joint innovative action in key areas: **Artificial Intelligence, New Generation of Semi-conductive Pharmaceuticals and Energy saving & environment protection**
- ◆ Implement fundamental research and applied research joint projects : **Scientific Apparatus and Key Laboratories**
- ◆ Implement high-end innovative **human resource assembling action**

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## Play the Radiation Effecting Role of Guangdong-Hong Kong-Macao Greater Bay Area

- ◆ Give full play to the **radiation effecting** role of the Guangdong-Hong Kong-Macao Greater Bay Area, lead in institutional innovation and business environment setting , create regional economic cooperation in the **Pan-Pearl River Delta** of win-win, opening and interactive, powerful functional and industrial coordinative. Promote regional cooperation in the Pan-Pearl River Delta to a higher level, deeper and wider range.
- ◆ Strengthen the radiation effecting role of Guangdong-Hong Kong-Macao Greater Bay Area , build a cross-region **innovation cooperation network**, strengthen S&T innovation cooperation with other regions, and actively transporting human resources, S&T achievements and new technologies to the **eastern, western and northern regions of Guangdong**, so as to promote the development of those regions.



## Co-establish the International Science and Technology Innovation Center

- ◆ Study and draw up the implementation plan for the construction of **International Science and Technology Innovation Center**, promote the construction of "Guangzhou-Shenzhen-Hong Kong-Macao" science and technology **innovation corridor**, establish regional innovation system and explore measures for the cross-border science and technology innovation **elements circulation**.
- ◆ Speeding up the layout of **major S&T infrastructure, key research institutions and innovation platforms in Guangdong-Hong Kong-Macao Greater Bay Area**. Promote the construction of **scientific apparatus**, to accelerate the industrial innovation and construction of **transformation platforms**.



**President Xi Jinping said :**

**It is a historic opportunity to construct the Guangdong-Hong Kong-Macao Greater Bay Area . We should seize the great opportunity to work together with Hong Kong and Macao to speed up building an international top-class bay area and a world-class city clusters.**

# Thanks for Your Attention!



**Hong Kong-Zhuhai-Macao Bridge (HZMB) officially opened to traffic on October 24<sup>th</sup>, 2018.**