

Country factsheet

China





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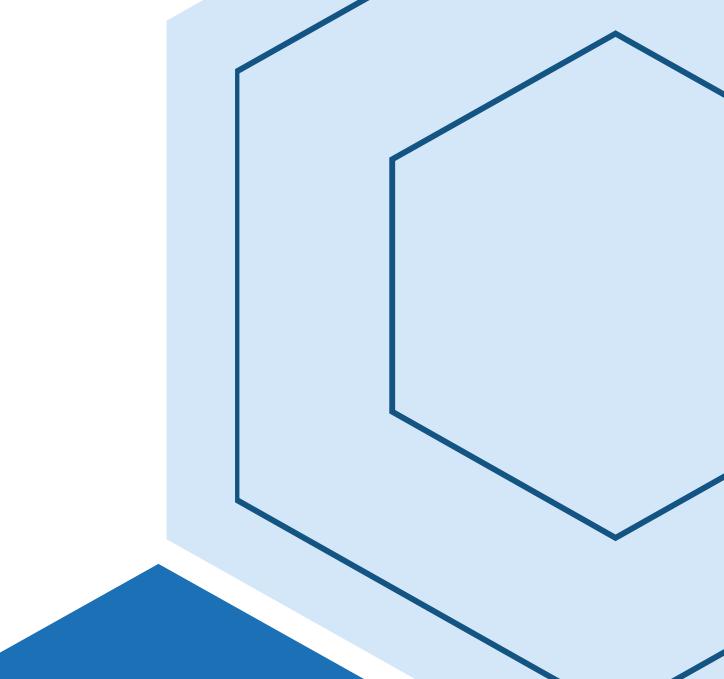
Introduction



This document presents an overview of the cluster policy in China. Given its importance to contextualise the cluster policies (and related) analysed in the factsheets, a comprehensive outlook of the country in socioeconomic terms can be consulted in the OECD Economic Survey: China 2019.

The "Economic Surveys" present the major challenges faced by the country, evaluates the short-term outlook, and makes specific policy recommendations





01

National cluster policy, programmes and initiatives





1. National cluster policy, programmes and initiatives

Policy type:	National cluster policy	National cluster policy	Regional cluster policy (example of the Guangdong-Hong Kong-Macao Greater Bay Area)
Policy name:	TORCH Program	<u>Cluster Cities</u>	Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area
POLICY OBJECTIVES	Strengthening cooperation between companies or industry and RTDI actors Increasing competitiveness and boosting scale up of SMEs Supporting internationalisation activities Enhancing the visibility of clusters Fostering R&D activities, technology development and implementation Fostering innovation and strengthening innovation ecosystems Promoting entrepreneurship, startups and spin-offs Promoting employment and upgrading skills and competences	Strengthening cooperation between companies or industry and RTDI actors Supporting internationalisation activities Enhancing the visibility of clusters Fostering R&D activities, technology development and implementation Fostering innovation and strengthening innovation ecosystems Promoting social and sustainable economy and other solidarity-based initiatives Promoting employment and upgrading skills and competences Enhancing territorial cohesion (through RIS3) Connect to global supply chains	Strengthening cooperation between companies or industry and RTDI actors Increasing competitiveness and boosting scale up of SMEs Supporting internationalisation activities Enhancing the visibility of clusters Fostering R&D activities, technology development and implementation Fostering innovation and strengthening innovation ecosystems Promoting entrepreneurship, start-ups and spin-offs Promoting social and sustainable economy and other solidarity-based initiatives Promoting employment and upgrading skills and competences

Enhancing territorial cohesion (through RIS3)

Connect to global supply chains

The TORCH Program is China's central cluster policy to foster economic growth, entrepreneurship, and the development of technology infrastructure. The programme kickstarted Chinese high-tech innovation and start-ups through Innovation Clusters. Technology Business Incubators, Seed Funding (Innofund), and the Venture Guiding Fund. As part of this programme, Science and Technology Industrial Parks were created, including a national network of Productivity Promotion Centres which offer incubation and business support services to start-ups. Cluster innovation is driven by the collaboration between the industry and R&D institutions (universities).

The City Clusters policy aims to create 19 super-regions in China that are focused on regional specialisation, three of which are priority objectives, by accumulating businesses. R&D institutions, and universities within a city cluster. The improvement of infrastructure within a cluster and across clusters as well as social and employment opportunities are a central aspect of the City Clusters policy. A central part of this policy is also to raise the barriers to obtaining an official residency permit (hukou) in the wealthiest cities and to lower them in smaller cities nearby to encourage a spread of people and workers across regions/agglomerations. China plans to make the three priority clusters the Pearl River Delta/Greater Bay Area, the Yangtze River Delta, and the Beijing-Tianjin-Hebei region - world-leading clusters by 2020. The City Clusters policy is based on the idea that urban residents with higher incomes consume more than rural residents, boosting the economy, and that clusters increase the size of the labour market and foster productivity and innovation.

Enhancing territorial cohesion (through RIS3)

Connect to global supply chains

The 'Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area' (in some sources also referred to as Pearl River Delta) is derived from the national City Clusters policy. The Greater Bay Region fosters different market specialisations; Hong Kong is the financial centre, Shenzhen is China's 'Silicon Valley' due to its innovation and start-up culture, Guangzhou is home to a well-developed manufacturing and logistics industry, and Macao and Zhuhai are designed to be popular tourism destinations.

As part of the regional clusters policy, free trade is fostered, which is why China aims to make the Guangdong Free Trade Zone open to international investment and global supply chains within the region. The regional cluster policy also promotes the expansion of infrastructure, R&D innovation, regional cooperation and integration, as well as social and economic opportunities for national and international citizens.

The Greater Bay Area accounted for 12%, or USD 1.38 trillion, of China's economy in 2016, while it is home to only 5% of China's population. Although the Yangtze River Delta cluster is bigger regarding its economic size (accounting for about 20% of national GDP), the Greater Bay Area

			cluster is remarkable because of its ambition to transform nine mainland cities and two special administrative regions into a new Silicon Valley-type technology and innovation hub with the regional cluster development plan. Furthermore, Guangdong Province is a vital economic location as it accounted for 23.5% of China's total trade in 2018. This cluster development plan aims to make the region a world-class cluster, rivalling Tokyo, New York, or San Francisco.
POLICY FOCUS	Cross-sectoral	Cross-sectoral	Cross-sectoral
+	While the TORCH Program is based in high-tech innovation, it covers a wide range of sectors, such as biomedicine, next generation information industries, marine technology, intelligent application of spatial information networks, advanced materials, energy storage and distribution, and newenergy vehicles.	The City Clusters policy aims to create clusters with regional specialisation, covering a wide range of sectors, such as high-technology products, electronic goods, textile manufacturing, toys, or plastic products.	Within the Guangdong-Hong Kong-Macao Greater Bay Area, China aims to not only spur regional specialisation but also cross-sectoral cooperation, combining for instance sustainable energy, technology, and infrastructure.
RESPONSIBLE AUTHORITIES	Both drafting and implementation	Both drafting and implementation	Both drafting and implementation
	Provides funding	Provides funding	Oversees the implementation
1	Oversees the implementation	Oversees the implementation	
	The TORCH Program is planned and implemented by the Torch High Technology Industry Development Center (also Torch Center) under the guidance of the Ministry of Science and Technology (MoST). The national government approved this cluster	The overall policy objective was initiated by the central government of China, however, the administration and financing of cluster projects within clusters is largely the responsibility of local and municipal authorities. Large, cross-cluster infrastructure projects (railways, airports,	The national ministries are responsible for the development of the policy plan, whereas the regional governments (Government of Guangdong Province and the Governments of Hong Kong and

	development programme in 1988. It is based on centralised program objectives with local implementation experiments.	roads, logistics, etc.) are also overseen by the central government.	Macao SARs) oversee the implementation of the policy objectives.
BENEFICIARIES	SMEs Research organisations Academic institutions Start-ups Business associations Large firms Technology centres General population	SMEs Research organisations Academic institutions Start-ups Business associations Large firms Technology centres General population	SMEs Research organisations Academic institutions Start-ups Business associations Large firms Technology centres General population
	The TORCH Program largely focuses on start-ups, research and academic institutions, as well as SMEs and large enterprises in the technology business. The aim of the programme is to create a strategic national and local network of high-tech zones and innovation parks.	The City Clusters policy aims at strategic national economic development by strengthening business innovation and providing social opportunities (employment and labour market integration, pension, higher education, technical training, health services, transferability of social insurance).	This cluster policy aims to increase the economic development and competitiveness of start-ups, SMEs, as well as large firms. Additionally, the policy integrates academic and other research institutions in order to enhance regional innovation.
INSTRUMENTS Financial	Funding collaboration initiatives Support to R&D projects, SMEs becoming cluster members, etc. Subsidies for cluster infrastructure (e.g. offices, equipment) Supporting market entry (e.g. testing, proof-of concept, prototyping, demonstration projects)	Support to R&D projects, SMEs becoming cluster members, etc. Innovation: voucher, support to hire PhDs, cooperation with R&I actors	Support to R&D projects, SMEs becoming cluster members, etc. Financing networking events Supporting market entry (e.g. testing, proof-of concept, prototyping, demonstration projects) Innovation: voucher, support to hire PhDs, cooperation with R&I actors

Technical assistance	Innovation: voucher, support to hire PhDs, cooperation with R&I actors Infrastructure: coworking spaces, offices, incubation and accelerator spaces, research centres, technology parks etc. Support for hard skill development: knowledge transfer, intellectual property, entrepreneurship, export advice, market intelligence Support for soft skills development: coaching, management training, upskilling/reskilling Others: Productivity Promotion Centers provide hiring services to start-ups. The sources do not specify whether this refers to subsidies or non-financial services.	Infrastructure: coworking spaces, offices, incubation and accelerator spaces, research centres, technology parks etc. Support for hard skill development: knowledge transfer, intellectual property, entrepreneurship, export advice, market intelligence Support for soft skills development: coaching, management training, upskilling/reskilling Marketing activities: advertising, communication, events, fairs, and so on Others: regional economic specialisation labour market integration infrastructure development and integration (mainly transport and commuting opportunities) protection of green open spaces protection of farmland and natural resources	Infrastructure: coworking spaces, offices, incubation and accelerator spaces, research centres, technology parks etc. Support for hard skill development: knowledge transfer, intellectual property, entrepreneurship, export advice, market intelligence Support for soft skills development: coaching, management training, upskilling/reskilling Support for networking and partnership building (at national and/or international level) Marketing activities: advertising, communication, events, fairs, and so on Others: labour market integration and social benefits improved financial market access infrastructure development and integration (transport and commuting opportunities) protection of natural resources and smart land use
	The TORCH Program comprises various development support services. These include support for R&D design	The City Clusters policy mainly focuses on creating supercities that boost innovation, national economic growth, and market	As part of the national City Clusters policy, the Greater Bay Area cluster policy mainly focuses on creating a supercity that boosts

		and technology transfer, entrepreneurship support in technology fields, industry promotion, talent training, technology finance, technology business incubators which provide start-ups with office space, free rent, access to university technology transfer, among others. The programme also gives access to Productivity Promotion Centers that offer consulting, promotion, product testing, hiring, training and incubation services to start-ups. Funding from the central government is limited, and local governments are largely responsible for the administration and financing of high- technology zones.	specialisation. This in turn enhances employment opportunities, social benefits for citizens, and consumer spending.	innovation, national and regional economic growth, and market specialisation in order to enhance global competitiveness. This in turn enhances employment opportunities, social benefits for citizens, and consumer spending.
HISTORY	Period	Unlimited period	Limited period	Limited period
	Ending year (for policies with limited period)	-	2035	2035
	(for policies with limited	1988	2035	2035



			planned until 2035, it may continue even after this period. Starting year: 2006	larger national City Clusters policy and thus follows its timeframe until 2035. Starting year: 2019
BUDGET	Overall	Innofund: Approximately EUR 890,000,0001 between 1999 and 2013. Venture guiding fund: budget not indicated.	Not indicated in the sources	Not indicated in the sources
	Annual	Not indicated in the sources	Not indicated in the sources	Not indicated in the sources
	Source of funding	State government	Mostly local and municipal administrations	Mostly the regional governments of Guangdong, Hong Kong, and Macao, with support from the national government since the cluster policy is derived from the national City Clusters policy
POLICY	Availability	in-itinere	no policy evaluation	in-itinere
EVALUATION	Results	The policy evaluation of the TORCH Program relies on continuous research, feedback, and adaptation, rendering the program more flexible to unexpected changes and policy options.	There is no evidence suggesting that there have been any evaluations conducted. Policy evaluation likely depends on regional governments and their cooperation with national authorities.	The National Development and Reform Commission and relevant ministries, including the Hong Kong and Macao Affairs Office of the State Council, monitor, evaluate, and finetune the progress of the implementation of the policy plan. No interim evaluation results are mentioned in the sources.

 $^{^{\}it 1}$ Indicated in USD in the source and converted into EUR at ECB exchange rate from 25-06-2020.



POLICY ALIGNMENT WITH THE EU PRIORITIES Digitalisation Social inclusion Green economy Social inclusion

02 State of play of cluster policy



2. State of play of cluster policy

The data below illustrates how the country ranks in terms of maturity of cluster policy. The maturity index is based on a combination of factors presented in Chapter 1 and which are scored based on their existence:

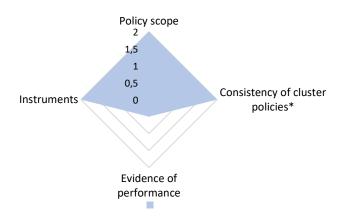
- Policy scope: whether the country has a dedicated cluster policy, or cluster creation and/or development is targeted through broader policies (existence of broader policies = 1 point; existence of targeted cluster policies = 2 points)
- Consistency of cluster policies: assessment of the duration and experience of the country in doing cluster policies. This dimension assesses only existing cluster policies and not broader policies (no cluster policies available = 0 points; < 10 years of experience or > 10 years (but interrupted) = 1 point; > 10 years (but with clear continuity = 2 points)
- Evidence of performance: the existence of monitoring and evaluation mechanisms determines the degree of policy development in the country (no evaluations = 0 points; existence of evaluations of past policies or in-itinere = 0.5 points; existence of ex-ante and/or ex-post evaluations = 0.5 points)
- **Instruments:** whether the policies provide any instruments to support the policy implementation, being these financial and/or technical assistance (1 point for each type of instrument available)

It is important to note that the maturity does not reflect the performance of a country, but only the degree of development of their cluster policy at the moment when the data was collected (2020). The maturity index illustrates how the country scores for each of these four dimensions (policy scope, consistency of cluster policies, evidence of performance and instruments) compared to the maximum score that they can reach.

	China	Maximum
	Cillia	score
Policy scope	2	2
Consistency of cluster policies*	2	2
Evidence of performance	0,5	1
Instruments	2	2

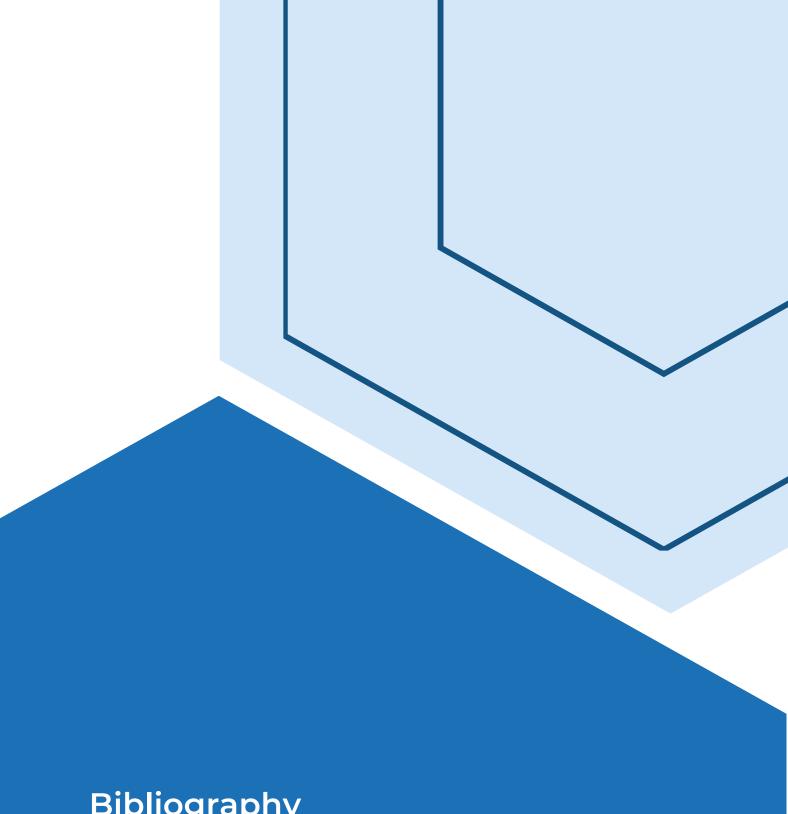
^{*} This dimension is scored solely if the country has a dedicated cluster policy and it assesses only cluster policies

Cluster policy maturity level



State of play of clu	State of play of cluster policy in the country		
Policy evaluation (for terminated	No policy evaluation		
policies)	The sources do not indicate a policy evaluation for terminated policies in China.		
Policy approach in the country	Cluster approach used directly by national/regional development agencies Specific policies to support cooperation projects		
	Broad-based framework policies to support cooperation effectiveness		
Continuity	China has two long-term, ongoing national cluster policies. One of these national cluster policies, the Torch Program, has existed since 1988, which shows that China's ambition to increase its global market competitiveness with the aid of a national clusters programme developed early. Ever since, the State Council and the Ministry of Science and Technology have established numerous high-tech industrial development zones, Science and Technology Industrial Parks, Software Parks, and Productivity Promotion Centers, spurring research, development, and innovation in the country.		
	While the City Clusters policy was established much later - first mentioned in 2006 and then fully formulated in 2016 - it is another long-term policy that highlights China's focus on cluster continuity to boost national economic and social development.		
	Notably, China is investing a lot of resources into research and innovation, cooperation with academic and R&D institutions, and regional infrastructure and social benefits, however, China's concept of industrial clusters may differ from the European concept of clusters, which relies on cluster organisations. Based on conclusions drawn from the sources, China does not focus so much on cluster organisations but statistical clusters, viewing clusters as conglomerations of different actors that are supported by R&D and infrastructure development efforts.		
Consistency	> 10 years (but with clear continuity)		
	Both of China's national cluster policies are ongoing and have a clear continuity without interruption. While the Torch Program does not have an ending year, the City Clusters policy is set to end in 2035; however, it may continue even beyond this period since China has demonstrated over the years that it aims to increase its efforts to enhance its economic competitiveness globally by building 19 supercity clusters, three of which are prioritised and have a cluster agenda that boosts regional development, integration, and cooperation. The three priority regions of the national City Clusters policy are the Pearl River Delta/Greater Bay Area, the Yangtze River Delta, and the Beijing-Tianjin-Hebei region. The Guangdong-Hong Kong-Macao Greater Bay Area cluster policy was selected as a representative regional example since the policy is clearly outlined in a publicly available, comprehensive development plan on how the regional authorities of the Greater Bay Area aim to stimulate the growth of this cluster2. Moreover, the plan was published in 2019 and therefore reflects the recent status of one of China's central regional cluster policies.		

 $^{^{2}}$ See China's Constitutional and Mainland Affairs Bureau (2019) in the bibliography.



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