People-focused Economic Development in Chongqing: Building an Inclusive Innovation Ecosystem

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Cities Development Initiative for Asia
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Cities Development Initiative for Asia (CDIA) is a multi-donor trust fund managed by the Asian Development Bank (ADB). It works closely with secondary cities in Asia and the Pacific to address gaps in infrastructure development and financing. It uses a demand-driven approach to support infrastructure projects that emphasize poverty reduction, environmental improvement, climate change mitigation or adaptation, and good governance. To facilitate these initiatives at the city level, CDIA provides a range of international and domestic expertise that can include, among others, support for project preparation studies for high priority infrastructure investment projects.

CDIA is implemented by ADB and Agence Française de Développement (AFD). It receives funding support from Austria, France, Germany, Switzerland and the European Union. It was established in 2007 by the ADB and the German government with the intent of improving the lives of 1.6 billion people in Asia and the Pacific.

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Introduction

China's Yangtze River Economic Belt (YREB) covers nine provinces and two specially administered cities in the Yangtze River Basin, which contribute about 45% of the nation's economic output. Yet economic growth in the middle and upper reaches of the Yangtze River Basin is lagging. The Government thus formulated the YREB development plan 2016–2030, which prioritized ecological protection and green development as the guiding principles for the region. Chongqing, a major economic hub on the upper Yangtze, is part of the YREB, and applied for Asian Development Bank (ADB) loan support under the PRC and ADB's cooperation framework for the YREB industrial transformation initiative. In January 2018, CDIA supported a project preparation study (PPS) for Chongqing to enhance its project proposal on green industrial transformation.

Early in the PPS, CDIA carried out assessments of various aspects of Chongqing's development, and its requirements in terms of innovations, which formed the basis for the eventual realignment of the project orientation. These included:

- A socio-economic assessment of Chongqing and the YREB region to understand its macro social and economic situation and industrial development status;
- A social assessment of Chongqing and the YREB region to identify key vulnerable groups, particularly relating to migration issues in the Project areas;
- An industrial innovation assessment of Chongqing, and of relevant experience in China and internationally, to understand gaps and requirements;
- A higher education assessment, providing overview of China higher education system, and current gaps towards job market;
- A innovation and entrepreneurship education assessment, focusing particularly on gaps and needs in the field of innovation and entrepreneurship.

This brochure summarizes CDIA's findings and role in the development of an "inclusive innovation ecosystem" concept, in which a network of various stakeholders and resources, including enterprises, universities, R&D institutions, government agencies and professional service providers cooperate to create a sustainable, enabling environment for innovation. This has now been adopted as the basis of the Project, which has correspondingly been renamed the "Chongqing Innovation and Human Capital Development Project." The innovations built into the design ensured ADB's approval of a USD200 million investment loan for the project in 2020. It is hoped the project's concept and approach to innovation can serve as a model that can be replicated by other cities in the middle and upper reaches of the Yangtze River.

Photo from Pexels

Socio-Economic Context of the Yangtze River Economic Belt and Chongqing

Industrial development varies significantly between different parts of the YREB. In general, the lower reaches of the Yangtze River are at a more advanced stage of development, with a more dynamic and environmentally-friendly industrial structure, while the middle reaches have a relatively high concentration of traditional industries such as steel, chemicals, and heavy equipment. The upper reaches rely more on resource-intensive industries at a lower level in the value chain.

Chongqing, located at an important geographic intersection in the upper reaches of the Yangtze, is a regional economic center, and has long been an important industrial base and transportation hub for western China. Formerly part of neighboring Sichuan province, it was made a centrally administered municipality in 1997, giving it the same status as Beijing, Shanghai and Tianjin, which also report directly to the central government. It is China's most populous city, with 30.57 million residents in 2017, and has the largest administrative area, 82,400 km2, which includes large mountainous and rural regions.

Chongqing's GDP ranks fifth among all Chinese cities, thanks largely to its traditional heavy industry. Since 2000, however, efforts have been made to transform the city's economy and shift its focus towards an innovation- and technology-driven approach, with the electronic information sector as a new pillar industry. The recently established Chengdu-Chongqing City Cluster, which links it to the capital of neighboring Sichuan province, should also provide a stimulus for fresh growth. And with environmental protection a priority for the development of the YREB, Chongqing is expected to play a leading role in promoting and demonstrating green and inclusive development in southwest China, one of the country's less developed regions.

Figure 01: Location of the Yangtze River Economic Belt in China

Challenges for Chongqing's Economic Transformation

Despite these changes, however, Chongqing's economic development is widely felt to have lagged behind its potential, and its innovation level has been ranked one of the lowest among major Chinese cities. Despite some economic realignment, it remains heavily reliant on resource-dependent traditional industries, such as iron and steel and automotive manufacturing, in which older, less environmentally friendly technology is common, and which face a challenge to survive in China's rapidly growing and increasingly environmentally sensitive economy. Chongqing's failure to adapt has also had significant social and environmental costs, with many of its residents having to migrate to China's coastal regions for employment opportunities.

It is clear, therefore, that Chongqing needs to shift from a low-value, polluting economy to a high-quality, green, knowledge-based, diversified economy. To make this change, however, will mean facing a number of significant challenges.

Slowing Economic Growth, Significant Internal Development Disparity

Between 2014-2016, Chongqing led the nation for double-digit economic growth, but this fell back to 9.3% in 2017, declining further to 6.5% in 2018. There are also huge socio-economic disparities between Chongqing's urban and rural areas: in 2016, the per capita GDP of central Yuzhong District was 7.6 times higher than that of Wuxi County, Chongqing's lowest ranked area. The municipality includes a large mountainous area in its north-east, which is ecologically vulnerable and unsuitable for large-scale economic development.

Population Outflow and Resultant Social Risks

In 2017, outward migration from Chongqing was 4.82 million people, compared to inward migration of 1.68 million. The trend is slowing, but the phenomenon of 'empty towns and villages' in disadvantaged rural parts of Chongqing remains serious. This has led to both labor shortages and an aging population: in 2017, the proportion of the city's population aged 16-59 was 61.9%, the lowest in the nation, and the city faces a growing demand for old age support. Women and children who have been left behind when family members leave to work elsewhere have also been affected by marital issues and educational issues: "left-behind children", often looked after by poorly-educated, aging grandparents, are statistically disadvantaged in knowledge and skills, social adaptability and mental health, and are more likely to self-harm.

Mismatch between Government Training and Migrants' Needs

The Chongqing municipal government has encouraged returning migrant workers to engage in entrepreneurship and start small and medium enterprises. In 2017, 0.53 million migrant workers returned to the city, and 0.40 million established enterprises, creating 1.72 million jobs. However, most returning migrants are poorly educated, and require skills development, but government training has not met their needs: in 2017, 67.1% of returned migrant laborers had no training, according to official data. Improved support services, education and job opportunities are needed to retain and empower young workers.

Weakness in High-Technology Industry, Innovation and Incubation

Slow development of high-tech and innovation-

oriented industry is one of Chongqing's biggest economic challenges. The city's 13th Five-Year Plan pledged to build an "important national modern manufacturing base", but acknowledged that the city's technological enterprises are "small and weak in core competitiveness". In the "2017 China Innovation and Entrepreneurship Report", Chongqing ranked 12th of the "Top 50 Best Mainland Entrepreneurial Cities in China", behind not only Beijing, Shanghai and Shenzhen, but also its neighbors in western China, Chengdu and Xi'an. This is due in part to a lack of science and technology parks, and also to a relative lack of incubators for entrepreneurship and innovation. Chongqing also lacks effective cooperation with high-tech industrial parks and incubators in cities like Shanghai, Beijing and Hangzhou, which are experienced in clustering technological companies.

Shortage of Talent for Innovation

While Chongqing has seen some growth in innovation and entrepreneurship (I&E), with government backing, the municipal authorities have identified a shortage of high-level innovation leaders as a crucial factor impeding its economic transformation. This is a vicious circle: Chongqing's relatively weak technical innovation capacity has resulted in an inability to attract graduates and entrepreneurs from other parts of China. Chongqing's universities, meanwhile, lag behind those of eastern China, in technical innovation, facilities and capacity building; and outdated teaching methods are still common in the city's higher education institutions (including TVET). There is thus an urgent need for more market-oriented I&E education in the city's universities and colleges.

CDIA's study further emphasizes that, to make the transition to a more efficient, environmentally friendly economy, it is essential for Chongqing to invest in human capital development. The skills of Chongqing's workforce currently do not match the fast-developing needs – and technologies – of the market. The city therefore needs to build capacity to create an enabling "innovation ecosystem" to make its society and economy more sustainable and resilient. In particular, it is important that the city's higher education sector should think outside the box and seek not only to satisfy current market demands, but also to focus on future skills requirements.

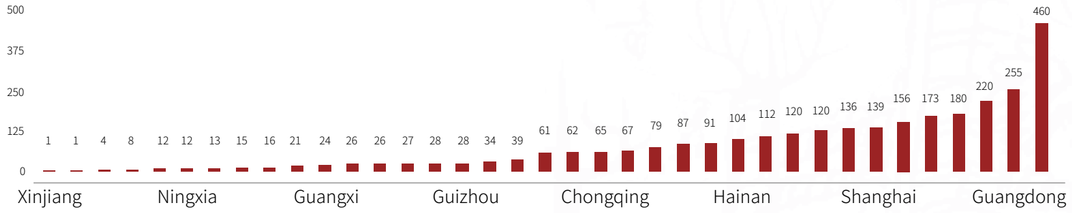


Figure 02: Incubators in China

Innovation and Human Capital as Drivers of Economic Transformation

Stimulating Innovation

Innovation is the primary driving force of economic development, since it increases efficiency and ultimately improves the quality of development. And human capital is the primary resource for supporting innovative development, as all scientific and technological innovation is the result of human ingenuity. Thus, cultivating and motivating innovation is ultimately a question of fostering talent. It is therefore vital to stimulate people's innovative spirit and potential, and attract science and technology specialists to engage in innovation and entrepreneurship. Creating an efficient innovation environment can drive not just economic development but also social progress.

Policy Support

The Chinese government has introduced a series of policies and programs designed to improve economic governance and boost innovation. In 2016, China's National Development and Reform Commission, Ministry of Science and Technology, and Ministry of Industry and Information Technology jointly issued the "Transformation and Upgrade Plan for Innovation-Driven Industry in the Yangtze River Economic Belt". This proposed an "integration-oriented" approach for science and technology, industry, education, and finance. It highlighted "enhancement of innovation capability" as a key task, including building a good environment for mass entrepreneurship and innovation, fostering an open innovation and entrepreneurship ecosystem, and promoting the integration of the results of successful innovation with market demand and capital. In April 2017, five ministries jointly issued a notice backing the construction of demonstration zones for industrial transformation and upgrading in 12 cities, including Chongqing. The notice proposed "exploring effective ways of cultivating new technology and new industry by means of innovation platforms and clustering talents".

Market Needs

Yet Chongqing still does not have enough engineering graduates to meet labor market demand: In 2017, the estimated talent gap in the city's secondary industry sector was 2.2 million people. A survey found that only 58% of employers in the mechanical design, manufacturing, and automation industries were satisfied with their graduate staff. This highlights the skills mismatch between college students and enterprises' needs: Chinese society places great emphasis on the graduate rate of employment, but the education system pays little attention to the labor market's need for innovative, adaptable graduates. Colleges have little effective communication with enterprises, and rarely provide careers training for students. As Figure 03 demonstrates, over the past decade, around 30 percent of Chinese higher education students, on average, have initially been unable to find employment when they graduate. (Purple line, righ taxis.) The World Economic Forum estimates that the figure is more than 40 percent.

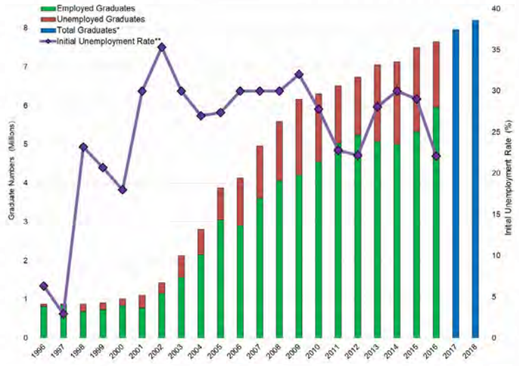


Figure 03: Number of HE Graduates and Initial Employment Rates in 1996-2018
Source: MOE data. Note: initial employment rates for 2017 and 2018 are unavailable

Without reforms in education, Chongqing's economic transformation will inevitably fail due to the lack of an appropriately skilled workforce. Improved facilities are necessary, including engineering technology innovation/R&D centers, public training platforms, industrial colleges and smart education cloud platforms. But there is also a need for curriculum reform, as well as improved teaching methods and learning resources (including teachers with technological innovation skills rather than traditional academic abilities), stronger school-enterprise linkages, and integration of production and education. Such changes, if implemented, can serve as an example for the transformation of higher education institutions across China.

Findings from CDIA's Capacity Development Activities

CDIA began its intervention for the Project Preparation Study by inviting a number of national and international specialists in education and industrial development to participate in a series of capacity development activities in Chongqing, to provide different perspectives on the Project's design. These discussions saw general agreement that transforming the human capital development strategy is key to achieving a green economic transformation in China, and that educational institutions should therefore provide interdisciplinary education, integrating training in green skills, innovation and entrepreneurship. It was also agreed that economic development zones need clear strategies and an enabling environment to develop high quality innovation and entrepreneurship. These capacity development activities helped the implementation agencies involved in the Project recognize their potential for change. As a result, the Project was reoriented, shifting its main focus from the construction of hardware, to fostering innovation and mainstreaming it into relevant human capital sectors, based on the concept of an innovation ecosystem.

The Concept of an Inclusive Innovation Ecosystem

A Network of Stakeholders and an Enabling Environment

The term "innovation ecosystem" refers to the network of various stakeholders and resources required to achieve sustainable innovation in a modern economy. Where innovation used to be just a question of originating new ideas, an 'ecosystem' that helps spark ideas and translate them into new products, services and processes in the market is now seen as vital. In such an innovation ecosystem[1], enterprises, universities, R&D institutions, government agencies, innovation transformation intermediaries and financial service companies all provide an enabling environment (in terms of human capital, financial capital and policies, etc.) for innovation, and for creating social value and benefits. The concept requires the nurturing of human capital, and a community of companies, government and academia that can stimulate innovation and maximize its outputs, and thus help create a sustainable and resilient economy.

Cultivating Human Resources – and Inclusivity

Human resources – people – are fundamental for innovation. Four key areas of innovation ecosystems – institutions of higher education, enterprises, government agencies and service entities – all rely on human capital. Cultivating the development of human resources is thus the most crucial step for improving innovation in these four sectors. Indeed, one of the main features of innovation ecosystems is inclusivity, which entails focusing not only on the institutions involved, but also on meso-factors such as the living and working conditions of people at different levels of society, including returned entrepreneurs, employees, surplus laborers, women and left-behind children. Giving people the chance to make the most of their abilities can not only harness their creativity and capacity for innovation, but also provide them with survival skills and a way of making a living, thus promoting social development.

The Role of Enterprises, Academia – and Government

Generally, colleges and universities and enterprises are the most important players when it comes to innovation activities, and governments provide policy guidance. However, one striking feature of China's innovation ecosystem is the importance of local governments and official research institutions. China's State Council has the final say on the organizational structure of the nation's scientific research system and the formulation of research policies. In the past, academic and industrial research have been quite separate in China. Over recent decades, progress in science and technology has led to the optimization of the industrial structure of transportation, energy, manufacturing, information engineering, modern services and other sectors, and enterprises have started to become the focus of innovation. But China still faces considerable challenges in improving its innovation environment.

Chongqing's Challenge – a Lack of Institutional Capacity

As the above suggests, enhancing the level of innovation and promoting the growth of human capital are the two most fundamental ways of building an innovation ecosystem – and are key to improving Chongqing's innovation environment. However, CDIA's assessment found that Chongqing lacks the capacity to create a truly enabling "innovation ecosystem", to allow the transfer of knowledge, ideas, and human and financial capital by linking institutions of higher education (teachers, students, researchers, administrators, and

[1] From Knowledge to Value: Unfolding the Innovation Cube, 2002, Ron Dvir

managers), enterprises (entrepreneurs, engineers, skilled workers, returning migrant workers), intermediary services (business incubators, legal, tax, finance, and intellectual property specialists), and government (officials, policy makers, advisors). At present, the city lacks policies to provide an enabling environment for innovation and create jobs and benefits. It also lacks innovation hubs that can facilitate capacity building and networking to generate new business ideas. CDIA's specialists also recommended that Chongqing should enhance its institutional strength to manage interdisciplinary capacity-building activities.

Maximizing Social Inclusivity in the Project

Social sector assessments were conducted early on, in order to maximize the Project's social inclusivity. They found that Chongqing's unique socio-economic situation requires support for returning migrant workers and their families, resident workers and farmers. Through CDIA's involvement in its design, the Project became more socially inclusive, extending support to various underserved groups in Chongqing's innovation ecosystem. Measures proposed included:

- Supporting the capacity of teachers to educate students to address social issues;
- Providing lifelong learning opportunities for local workers, farmers, and returning migrants to gain new or updated skills;
- Reducing out-migration and revitalizing areas of industrial decline;
- Encouraging female students, workers, and teachers to participate in emerging industries and entrepreneurial activities; and
- Providing service support to meet the needs of women, men, children, and families. The Project's support for these groups demonstrates the key features of an inclusive innovation ecosystem model. Compared to a typical innovation ecosystem, it pays far more attention to vulnerable groups such as students from less developed regions, farmers, unskilled workers, returning migrants, and women.

Model of an Inclusive Innovation Ecosystem

Figure 04 demonstrates the core concept of this approach, depicting the factors necessary to promote the development of an innovation ecosystem in Chongqing — primarily universities (schools), enterprises, government agencies and service organizations. The inner ring highlights the local entrepreneurs, college teachers, professionals and officials who will play a part in its development; it also highlights the reforms of government entities which will be needed to guide and harness the innovation resources that will link educational institutions with the needs of local enterprise/industry, and provide support services to facilitate innovation.

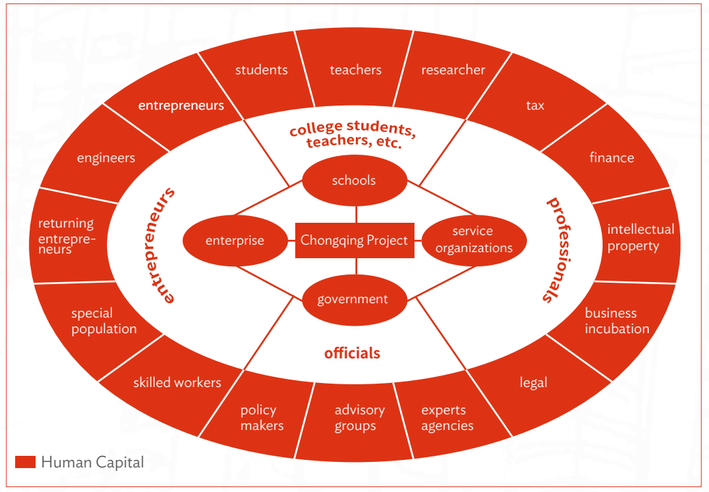


Figure 04: Inclusive Innovation Ecosystem Proposed for the Project

The outer ring represents the human resource groups involved in the Project, notably the entrepreneurs, engineers, skilled workers, and returned migrant workers who are the groups most affected by Chongqing's economic transformation, and are the focus of the Project. Other related human resource groups include university students, teachers, scientific research personnel and staff of other institutions that cooperate with HEIs; professionals who provide services for innovation and entrepreneurship (such as finance, business administration, legal affairs, and taxation); and government officials, advisory groups and experts from government agencies.

If effectively implemented, the Project will contribute significantly to the strengthening and sustainability of the institutions and organizations involved.

Innovation Ecosystem Subprojects

The subprojects were therefore designed and adjusted according to the human capital needed for innovation, from higher education institutes to industrial parks. Higher education institutions/research institutes and industrial parks/enterprises are the main organizations that drive innovation and economic transformation, while government, as the leading agency of this Project, brings significant additional value.

CDIA carried out research on six[2] subprojects, four in the education sector and two in industrial zones: Chongqing Jiaotong University (CJU); Chongqing Sanxia Vocational College (CSVC); Chongqing University of Science and Technology (CUST); Chongqing Vocational Institute of Engineering (CVIE); Changshou Technical and Economic Development Area (TEDA); and Dianjiang TEDA. Each subproject contains the key element of providing support for the development of innovative human capital, whether in university institutes, enterprises, government agencies or service organizations.

[2] During the ADB loan fact-finding mission in April 2017, the Chongqing University of Education (CUE) was added, hence the project includes 7 finalized subprojects.

Map of Chongqing

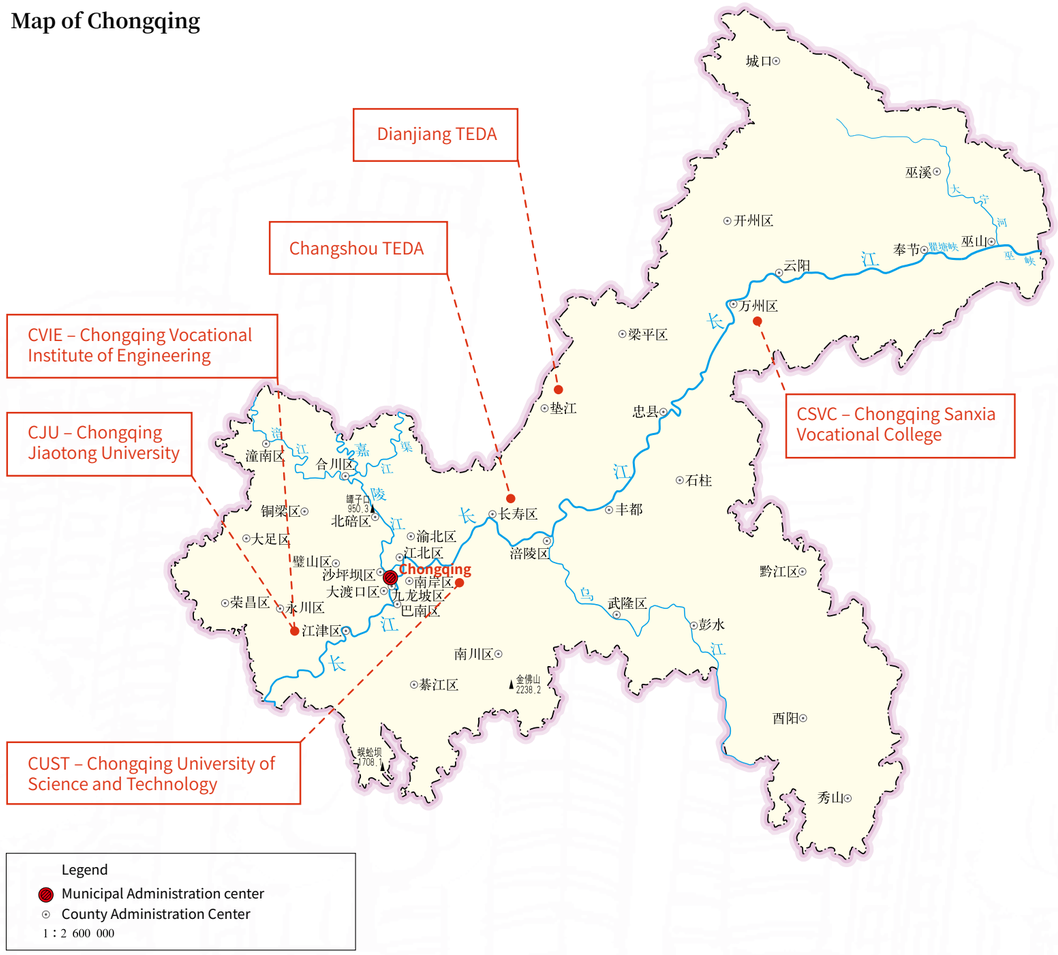


Figure 05: Location of the Six Subprojects in Chongqing

The CDIA intervention was carried out in close cooperation with the implementation agency for each subproject, with the aim of improving the Project design. Investigations were made into how each subproject could contribute to the elements of the innovation ecosystem concept that are core to the Project design (e.g. social inclusion to address the human capital needs of farmers, returning migrants, students, workers, and entrepreneurs). As a result of these interventions, **the subproject proposals were converted from the original design, which focused primarily on hardware investment, to focus instead on nurturing human capital as a source of innovation, with capacity development programmes to ensure stronger institutional capacity for sustainable innovation activities.**

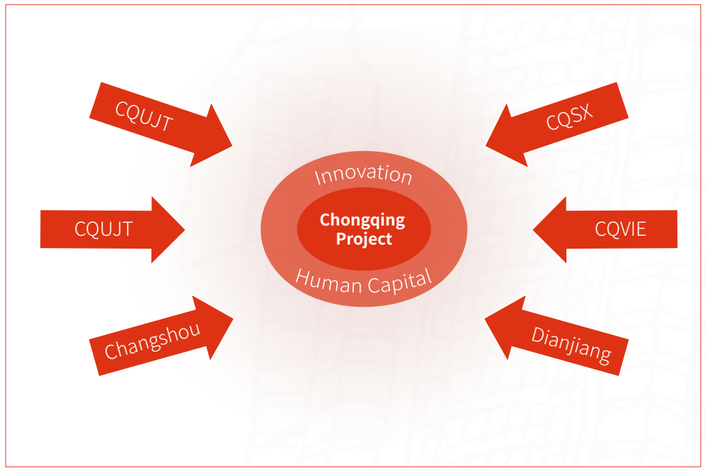


Figure 06: Focus of the Six Subprojects

Design of the Education Subprojects

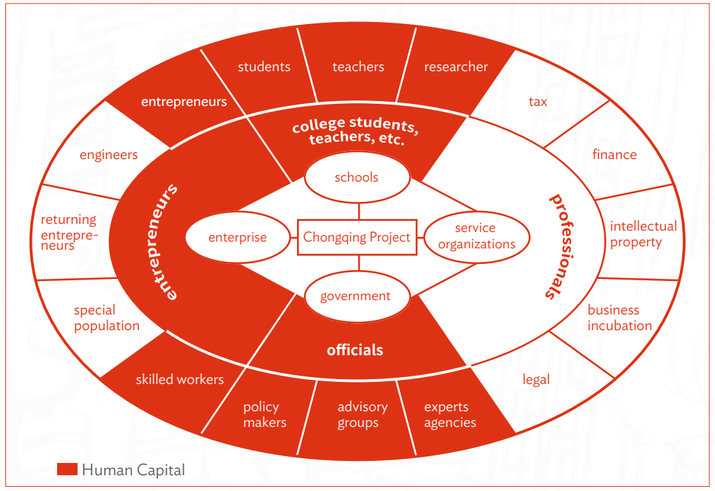
The four education subprojects are representative of the various types of higher education institutions in China, including a research university, two applied science universities, and a TVET institution.

Based on assessment of the education sector and of China's needs in terms of industrial innovation, it is clear that colleges, universities and other HEIs are important sources of innovation, and are a key element in the development of an innovation ecosystem. HEIs train innovative talents for economic development, nurture intellectual achievements, provide technical support, and promote science and technology, research and development (R&D), and innovation.

In contrast with their initial design, the revised focus of these subprojects is now on transforming the participating colleges from traditional HEIs into institutions that emphasize innovation, entrepreneurship and interdisciplinary education.

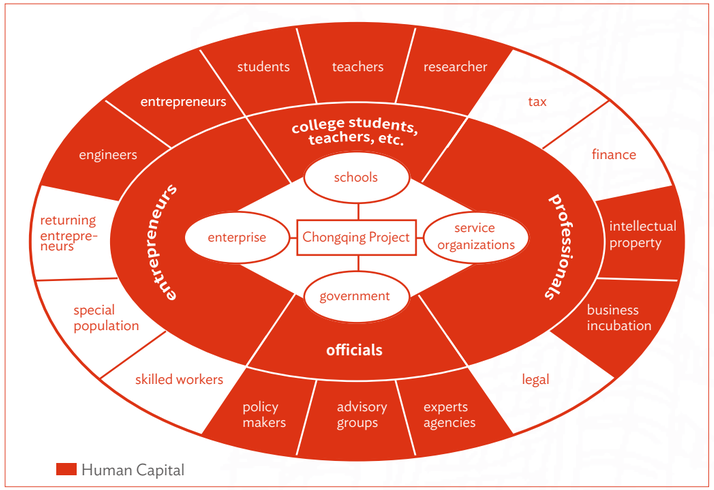
Chongqing Jiaotong University (CJU) "Science and Technology Innovation and Engineering Training Base" Subproject

CJU is a research-focused university, which plans to build a "scientific and technological innovation and engineering training base". This will involve establishing an electro-mechanical and green aviation innovation base, an environmental and water conservancy innovation base, a shipping innovation base, experimental and practical equipment acquisition, and teacher training. CDIA recommended that CJU should assess the needs of the transportation industry sector with regard to its proposed new engineering courses, and should integrate these needs with innovative and entrepreneurial education. CDIA further recommended that CJU establish an education innovation ecosystem for the benefit of teachers and students, consisting of: development of new engineering disciplines — innovative engineering talent training — scientific and technological innovation — transformation of results into industrial products — engagement with the public and enterprises. The aim is to provide university teachers with R&D capability, and offer experimental facilities for future engineers, and innovative experimental platforms for future entrepreneurs.



Chongqing University of Science and Technology (CUST) "Science and Technology Innovation Education Base" Subproject

As CUST is one of the few universities in China with a full range of public safety education disciplines (including fire and earthquake safety, public security, etc.), two components were proposed for this subproject, with CDIA's support: i) a shared base for public safety education, to provide practical training in safety education for school students and science popularization education for the community; ii) a Safety Science, Technology and Innovation Base, to provide services for the transformation and incubation of scientific and technological innovation achievements in the safety field. CDIA emphasized that the subproject should develop a linked innovation and entrepreneurship ecosystem, including: development of the safety specialty — cultivation of innovative talents — scientific and technological innovation — transformation of innovation results into industrial products — and industrial incubation. This emphasizes the reorganization and utilization of existing resources, to educate future entrepreneurs.

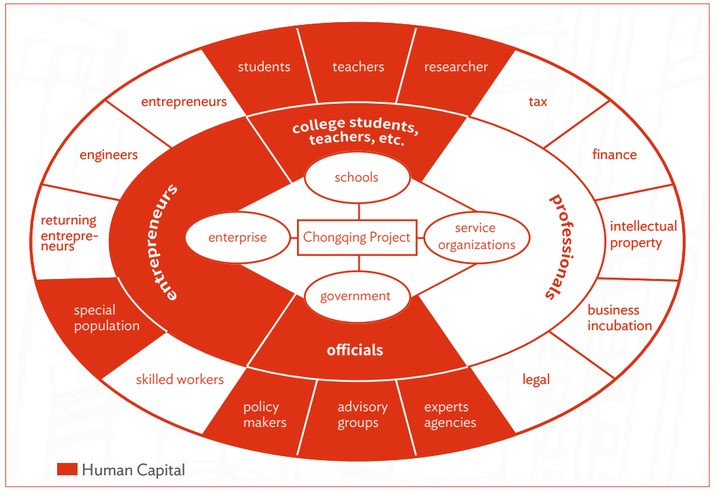


Chongqing Sanxia Vocational College (CSVC) "Smart Agriculture Innovation and Open Practice Platform" Subproject

This subproject includes the development of a research and education center for agricultural machinery for use in hilly geographic areas, an agricultural e-commerce research and innovation center, a smart agricultural technology center, and a smart agricultural information-sharing center.

Emphasizing innovation and the use of existing resources, the subproject focuses on: research into, and the application of, new agricultural equipment; training specialists in rural e-commerce provision; promoting innovation in agricultural technology and industry incubation; and building an agricultural information-sharing platform. CDIA recommended that the subproject should integrate industry and education in order to foster new talent (via an industry-focused curriculum, industry internships, development of a school-enterprise training base, etc.). It also recommended that innovation and entrepreneurship should be incorporated into curriculum development, teacher training and teaching resources.

The aim is to provide an experimental platform for innovation for teachers, agricultural research institutions, engineering students in R&D and testing centers, and other college students who may become entrepreneurs in the future.



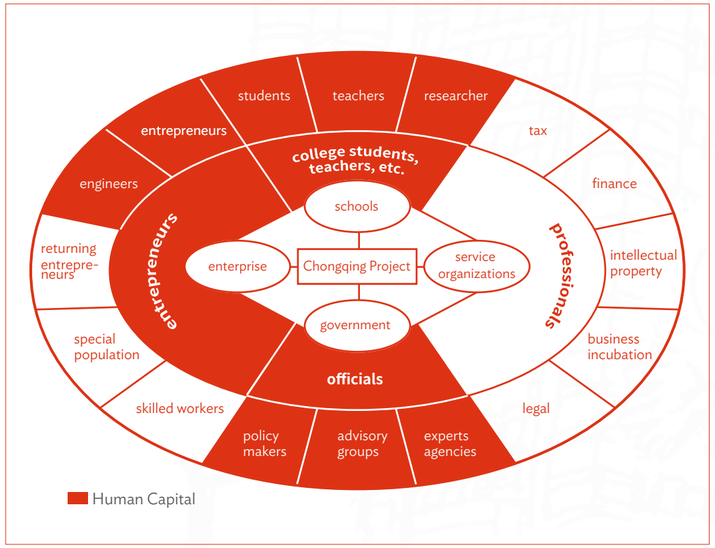
@Photo from Pexels

Chongqing Vocational Institute of Engineering (CVIE) "Intelligent Manufacturing and Intelligent Logistics Sharing Platform Construction" Subproject

This subproject includes the development of an intelligent manufacturing and intelligent logistics platform. It includes the construction of a number of training bases and production centers for college students and teachers to undertake engineering training and R&D activities, and facilities for makers within and outside the institution to provide innovation and entrepreneurship spaces and services.

CDIA proposed that, unlike traditional engineering practice bases, CVIE should cultivate I&E teachers, introduce entrepreneurship mentors from industry and integrate engineering training, I&E training and innovation incubation, in order to break barriers between different professional fields and allow students to participate in practical entrepreneurial projects.

The plans now also include joint research-industry collaboration centers, where students, teachers, enterprise researchers, engineers, and others can carry out joint industry-university R&D activities.



Design of the Industrial Park Sub-Projects

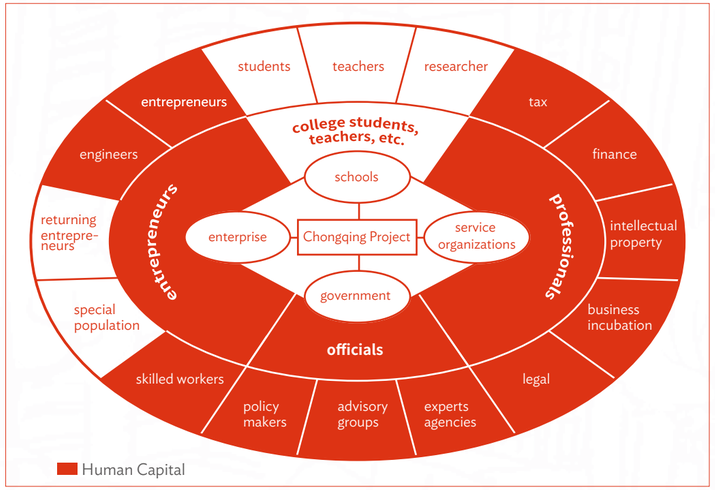
The industrial zone subprojects are in Changshou District and Dianjiang County, two areas which are representative of the different levels of development commonly seen in the middle and upper reaches of the Yangtze River. Changshou is a relatively developed area, which is home to heavy chemical industry, and is currently undergoing industrial transformation. Dianjiang, on the other hand, is a typical example of a county in the initial stages of industrialization, which needs to create jobs and revitalize its economy.

@Photo from Nipic.com

Changshou "International Cooperation Industrial Park Innovation Base Development" Subproject

This subproject aims to improve industrial innovation in Changshou TEDA and promote the development of human capital, by creating an enabling environment for an innovation eco-system, based on an enclave economic collaboration model and linkage with education components.

It includes development of an innovation and entrepreneurship community, R&D innovation incubation, an industrial innovation service, and a base for transforming scientific research into market-facing products. When planning the R&D innovation incubator, special attention was given to capacity building for service providers, including innovation services, talent fostering and technology incubation. The subproject's targets include entrepreneurs, engineers, scientific researchers engaged in innovation and entrepreneurship, and university teachers and students who can be a source of innovation-related ideas and projects for the Changshou TEDA. An innovative community is an essential element of a sound innovation ecosystem: by clustering talented people, it can encourage the exchange of innovative ideas and project information. This subproject aims to demonstrate an effective model to stimulate sustainable innovation and boost the accumulation of human capital. It also aims to offer internship programs for graduates from the education-based subprojects, and attract talented staff for enterprises.

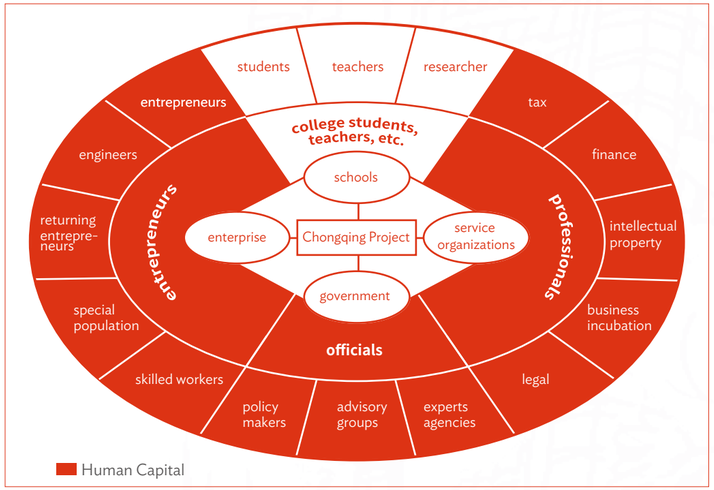


Dianjiang "Returning Home Entrepreneurship and Employment Demonstration Park Development" Subproject

CDIA's assessment of this subproject identified the need to address social problems, including left-behind elderly people and children in rural areas, and weakness in the formation of the human capital needed for innovation and for upgrading Dianjiang's development. It was therefore agreed that the project should address Dianjiang's requirements in the areas of social and human capital development. A two-pronged strategy was adopted to address:

- The sustainability of the existing labor force in Dianjiang and the needs of migrants returning to their hometowns to start businesses or find jobs; and
- Improvement of the innovation environment in Dianjiang. The subproject will build a demonstration base for entrepreneurship and employment for returning migrants, with integrated functions including comprehensive services for innovation and entrepreneurship, R&D, incubation and production.

The capacity building content of the subproject has therefore been significantly expanded to include publicity for and promotion of the benefits of returning home, and building a team of advisors to assist returning migrants. Societal aspects of the project include: training and assistance for returnees, covering employment and entrepreneurship, as well as a forum and internet service platform focusing on the same issues; an exchange platform for returnees, and a service system providing outreach to help returnees and other vulnerable groups meet the needs of the market. Target beneficiaries include migrants returning to Dianjiang County to start businesses, as well as locally employed workers, women and surplus rural laborers. The subproject also targets entrepreneurs, engineers and scientific researchers, as well as university teachers and students, who can contribute to industrial innovation in Dianjiang.



Project Impact and Takeaways

CDIA's intervention in the Chongqing Project proposal helped the Project to narrow its focus from general, unfocused green industrial transformation to a clear, socially inclusive vision, which will help address the current skills mismatch between the needs of Chongqing's enterprises and the labor force. The revised Project, now renamed the Chongqing Innovation and Human Capital Development Project, is designed to develop an ecosystem in which all types of innovation entities — enterprises, research institutes, colleges and universities, social organizations, government departments and others — interact in a coordinated way, thus promoting an open, smooth and efficient innovation network.

As well as developing the concept of the innovation ecosystem, CDIA's support for the subprojects involved analyzing the specific circumstances of each educational institution and industrial park/TEDA, engaging in debate, and providing a broader perspective on industrial transformation. This led to significant conceptual development and revision of the subprojects, resulting in a shift in the Project's orientation, from the simple provision of additional buildings, to a more holistic and integrative approach, focused on developing and attracting talented people to engage in entrepreneurship and innovation.

As well as promoting innovation in industry, the revised Project also seeks to encourage colleges and universities to accelerate their reforms to introduce heuristic, inquiry-based, research-based and practical teaching methods, and promote a more efficient two-way flow of researchers between research institutions, universities and enterprises.

By 2027, the Project will enable at least 8,000 graduates – at least 25% of them women – to gain employment in strategic emerging industries in Chongqing. It will also enable at least 600 skilled technicians – at least 25% of them women – who work in enterprises and R&D institutions in the Changshou and Dianjiang TEDAs to gain improved entrepreneurial skills.

It is hoped that the project, with the support and guidance of the Chongqing Municipal Government and the district governments involved, will set an example of the effective integration of vulnerable groups with education, capital, technology, philosophy and management to enable a unique and inclusive innovation ecosystem. It is also hoped that this pilot project will provide a strong driving force for green industrial transformation in Chongqing — and that the inclusive innovation ecosystem concept will be replicable in other cities in the YREB, particularly in the middle and upper reaches of the Yangtze, and also elsewhere in China and the Asia Pacific Region.

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