



# ***Chinese Academy of Science and Technology for Development***

**2021**

***Annual Report***

***Patriotism, Open-Mindedness,  
Innovation, Unified Values***

International Research and Training Centre  
for Science and Technology Strategy  
under the Auspices of UNESCO



United Nations  
Educational, Scientific and  
Cultural Organization



International Research and Training Center  
for Science and Technology Strategy  
under the Auspices of UNESCO

- In 1982, the National Research Center for Science and Technology for Development (NRCSTD) was established, with the autograph of Mr. Deng Xiaoping.
- In 2007, the Chinese Academy of Science and Technology for Development (CASTED) was established on the basis of the NRCSTD.
- In 2017, CASTED was designated for incubation as a China Top Think Tank.
- In 2020, CASTED officially joined the China Top Think Tanks pilot program.

# 中国科技促进发展 研究中心

陈小平

## Chinese Academy of Science and Technology for Development



Chinese Academy of Science and Technology for Development (hereafter referred to as CASTED), a public institution affiliated to the Ministry of Science and Technology (MOST) is committed to providing strategic insights and decision-making consultations for China's science, technology and innovation (STI) development. It was inaugurated in 2007 on the basis of the former National Research Center for Science and Technology for Development (NRCSTD) established in 1982. In 2020, CASTED joined the China Top Think Tanks pilot program. Its purpose is to provide research support and decision-making consultation for national STI development.

CASTED has nine research institutes, namely, Institute of General Research, Institute of Science and Technology Innovation Theory, Institute of Innovation and Development, Institute of Regional Science and Technology Development, Institute of Frontier Science and Emerging Technology, Institute of Science and Technology Governance and Talent, Institute of Science and Technology Foresight and Statistics, Institute of International Scientific and Technological Relations, Institute of Intelligent Science and Technology Innovation Policy (ISTIP); as well as three administrative departments, including Office of General Management and Supervision, Office of CPC CASTED Committee and Human Resources, and Office of Think Tank Operation and Research Management. It publishes two journals, i.e. *Forum on Science and Technology in China* and *China SciTechnology Think Tank*. In addition, it runs a postdoctoral research center, eligible for accepting admissions to doctoral programs; and administrates two national associations including China Sodality of Scientific and

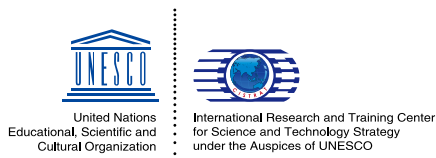
Technological Institutes and China Science and Technology Indicator Research Association. Besides, it hosts the International Research and Training Center for Science and Technology Strategy (CISTRAT) under the auspices of UNESCO, which is the first Category II center of UNESCO to focus on research and training for S&T policy and innovation strategy. CASTED has built various international cooperation platforms, including China-US S&T Think Tank Dialogue Series, "Belt and Road" Cooperation Network of STI Think Tanks, China-Japan-ROK STI Policy Research and Cooperation Platform and the China-Germany Innovation Policy Platform.

CASTED has always oriented itself towards the needs of national development in a pioneering and pragmatic way and has become a major research base for China's STI strategy, planning and policy. Looking forward, CASTED will strive forward with one heart and mind to build a specialized international top think tank that provides high-quality research for China's key STI policy making in a patriotic, open-minded, righteous and innovative way.

# Address from CASTED Leadership

2021 is an essential year for CASTED as one of the top think tanks in China.

## International Research and Training Centre for Science and Technology Strategy (CISTRAT) under the Auspices of UNESCO



The International Research and Training Center for Science and Technology Strategy (CISTRAT) under the auspices of UNESCO is the first Category II center of UNESCO to focus on STI policies, and also China's first Category II center in the field of S&T policy. Its operation is under the administration of CASTED. It aims to share China's experience with developing countries in the fields of sustainable development, science and technology development strategy, and poverty alleviation through cooperative research and training, and improve the research level and science and technology management capacity of developing countries.

We adhered to the global value of building a community with a shared future for mankind, maintained communication and ties between international think tanks, built the "Belt and Road" STI think tank cooperation network, and organized and participated in a number of international forums and seminars. We carried out international cooperation research and academic exchanges via international platforms, shared China's experience in fighting COVID-19 with science and technology, promoted mutual understanding of science and technology strategies and policies with various countries, and gave full play to the role of serving S&T diplomacy.

We upheld a positive attitude towards win-win cooperation, established institutional cooperative relations with well-known think tanks in the field of science and technology, and cooperated and interacted with research institutions, universities and enterprises. We focused on our own development, and at the same time, tried our best to serve the society.

In the coming 2022, we will continuously improve the quality and level of research, explore the innovation of national high-end think tank mechanisms, and make every effort to promote the development of CASTED to a new level.

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## 1.1 Key words

Green technology  
National innovation index  
Strategic scientific and technological strength Fintech  
Self-reliance and self-improvement in science and technology  
**Development as one of the top think tanks** S&T ethics  
China-US S&T relations S&T talents  
Patriotism, Open-Mindedness, Innovation, Unified Values  
S&T security  
China-US S&T connection mechanism Poverty alleviation by S&T  
Innovation survey Block chain  
National innovation system  
S&T governance

## 1.2 Milestones

### 1. Established the National Top Think Tank Research Alliance of Ministry of Science and Technology

In order to strengthen the coordination and cooperation of the systematic strategic research of the Ministry of Science and Technology and form high-quality strategic research results, CASTED took the lead to establish the National Top Think Tank Research Alliance of Ministry of Science and Technology.

### 2. Renewed the CASTED Council and Academic Committee

On January 24th, 2021, CASTED hosted the plenary meeting of CASTED Council.



### 3. Maintained connections with US think tanks

In 2021, CASTED actively created conditions for continuous communication with US think tanks, strengthened international cooperation and exchanges, jointly held dialogues with different think tanks, and maintained the exchange channel between Sino-US science and technology innovation think tanks.

#### 4. Held the Belt and Road Seminar in 2021 Pujiang Innovation Forum

On June 2nd, CASTED held the Belt and Road Seminar in 2021 Pujiang Innovation Forum in Shanghai.

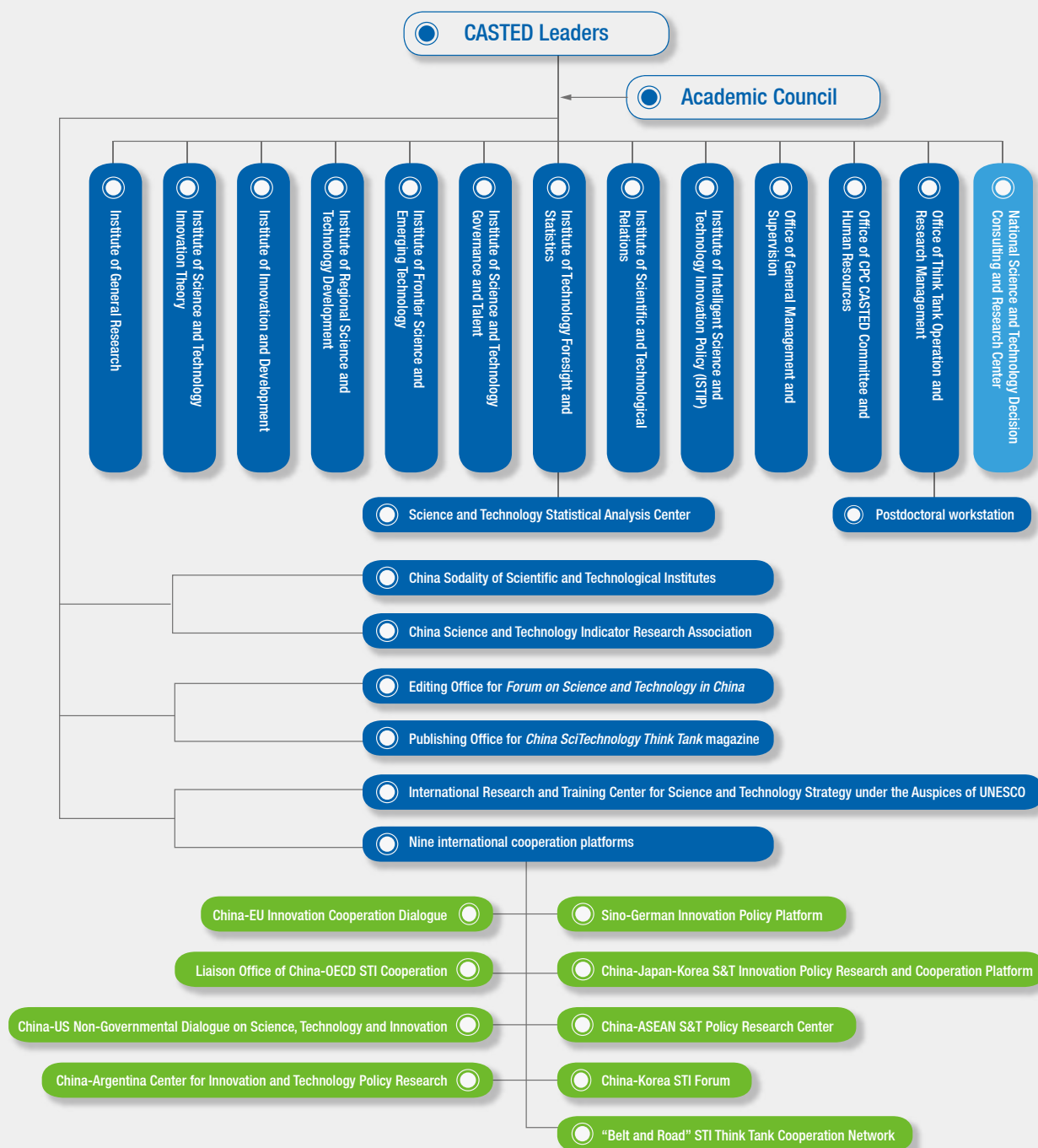


#### 5. Held the 9th International Workshop of CISTRAT

The CISTRAT 9th Workshop was held to provide online courses to Belt and Road countries and under-developed regions. The courses focused on international cooperation in fighting against COVID-19, S&T reform, S&T evaluation and strategic emerging industries, etc.



## 1.3 Organization Chart



## 2.1 For urgent demands of major decisions from the central government

### Continuous study of General Secretary Xi Jinping's important discourse on STI

CASTED tracked, compiled and studied the important speeches of General Secretary Xi Jinping on STI in meetings, field visits and research, congratulatory letters and other public occasions, and learned to comprehend the ideological and theoretical system of General Secretary Xi Jinping's important discourses on STI. We also worked with the General Office and organized with People's Publishing House to compile and publish *In-Depth Study of Xi Jinping's Important Discourse on Science and Technology Innovation*.

### Special seminar for the study of instructions from the central leadership

CASTED handled instructions on leading the major changes unseen in a century, high-quality development, common prosperity and peaceful rise, and produced related research reports; processed 26 instructions from central government on the development of a strong and sound innovation market, EU Industry 5.0, key core technologies, S&T rewards, and RMB internationalization, etc.; and handled one instruction on the public discussion arising from an article published by "Quantum School" and produced high-quality research reports in a timely manner.

### Research support for National Science and Technology Advisory Committee

CASTED co-organized a joint research team with multiple research partners to fully support the National Science and Technology Advisory Committee. We actively supported and participated in the efforts of the Committee by setting up joint research team, conducting in-depth field research and expert seminars, etc. We have completed high-quality research on the key subject of the international STI development trend in the new era and produced corresponding reports. We also participated in drafting

the 2021 advisory report of the Committee.

### Research assignments from CTTT Council

CASTED undertook key research projects assigned by the Office of the Leading Group on Finance and Economic Affairs, State Council Research Office, National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Science and Technology, etc., focusing on strategic and forward-looking topics such as carbon peaking and carbon neutrality, self-reliance and self-improvement in S&T, national strategic strength in S&T, rural revitalization, and high-quality growth of development zones in the new era.

### Research on major topics for Ministry of Science and Technology

Focusing on the national medium and long-term science and technology development plan and key topics including the national STI program of "14th Five-Year Plan", high-level S&T self-reliance and self-improvement, STI support for carbon peaking and carbon neutrality and regional innovation centers, and delivered themed reports including *Report on S&T Self-Reliance and Self-Improvement*, *Report on Advanced Energy*, *Report on Artificial Intelligence*, and *Recommendations for Political Consultations*. We also conducted prospective study on the realization of major plans and produced *Research on How to Implement National Medium and Long-Term S&T Development Plan and "14th Five-Year" National STI Plan*. Meanwhile, by carrying out research on national strategic strength in S&T, the new whole nation system, breakthroughs in critical and core technologies, basic research layout, strategic scientists, etc.



## Consultation services for all government departments

CASTED undertook projects assigned by the Office of the Leading Group on Finance and Economic Affairs, Office of the Central Cyberspace Affairs Commission and National Bureau of Statistics of China, and conducted research on topics including "improvement in innovation system with financial support", "international competition trend and development strategy of cyberspace technology", "governance of cyberspace technology", "19th national survey of venture capital" to produce consultancy reports, offering support to all government departments.

## Leading the efforts to build CTTT Research Consortium

CASTED took the lead in establishing the CTTT Research Consortium. Signed by all members and sent for printing, the *Work Plan for China Top Think Tank Research Consortium under Ministry of Science and Technology* serves as a guiding document for the Consortium. We promoted the Consortium to conduct researches on key issues. With the comments and suggestions collected from all Consortium members as the foundation, we developed 5 research proposals and implementation plans, including "Research on China's STI Resource Layout in the Context of the Great Power Game", with responsible personnel to take charge of each proposal and set up joint research teams.

## 2.2 For implementation of China's innovation-driven development strategy

### Research on China-US S&T relationship

CASTED has kept tracking the research and insights of more than 10 U.S. think tanks, including U.S. Information Technology and Innovation Foundation and the US Center for Strategic and International Studies. By promptly tracking the updates of the US think tanks in a timely manner, we drafted and reported five issues of Summary of US Think Tanks' Perceptions on U.S.-China S&T Relations. We have followed up with the new developments and situations in China-US competition in a timely manner, and conducted in-depth research on the impact of the Biden administration's S&T strategy towards China, the impact analysis and countermeasures to U.S. Innovation and Competition Act of 2021, and the analysis and countermeasures to the China-US competition in key technologies such as 5G, artificial intelligence, biotechnology, etc. These efforts have offered strong support to policy-making.

### Facilitating BRI Cooperation Network of STI Think Tanks

CASTED held the Pujiang Innovation Forum - "Belt and Road" Seminar, on which we discussed with experts from STI think tanks in the UAE, Pakistan, Serbia, Thailand and other countries along the "Belt and Road" on the STI cooperation as well as how to further develop the "Belt and Road" innovation routes and solutions.

### Consolidating and expanding international cooperation

Under the international cooperation frameworks of China-Germany Innovation Policy Platform, China-US Non-Governmental Dialogue on Science, Technology and Innovation, China-Japan-Korea S&T Innovation Policy Research and Cooperation Platform, China-ASEAN S&T Policy Research Center, China-EU Innovation Cooperation Dialogue, China-Korea STI Forum, Liaison Office of China-OECD STI Cooperation, etc., we have actively participated in exchanges and seminars and took full advantage of the cooperation platforms.

### Participation in international cooperative research and academic exchanges

CASTED co-hosted the 2021 Zhongguancun Global STI Think Tank Forum with Beijing Academy of Science and Technology; co-organized seminars with Korea-China Science and Technology Cooperation Center; and continued project cooperation and personnel exchange with World Intellectual Property Organization, Technology and Management Centre for Development of Oxford University, RAND Corporation, FAFO in Norway, Karlsruhe Institute of Technology in Germany, etc., to explore more space for international exchanges.

## 2.1 For urgent demands of major decisions from the central government

## Offering supportive research on China's regional STI centers

CASTED participated in the drafting of *Study Report on Accelerating the Deployment and Development of Regional STI Centers*, *Layout Plan of Regional STI Center*, *Proposals on Supporting High Quality Development of Central China with S&T in the New Era*, etc.

## Research on S&T talents

CASTED carried out research and studies on the reform of academician system and the reform of S&T reward system to provide support for major reforms, and developed the following reports: *Research on Improving the Evaluation System of S&T Talents Oriented to Innovation Capacity, Quality, Effectiveness and Contribution*, *Research on the Protection System of S&T Talents*, *Research on the Organization and Management of Major S&T Projects Based on the Principle of Self-Reliance and Self-Improvement*, and *Recommendations on Ensuring Research Time and Protecting Innovation Capacity of Researchers*.

## Research on national innovation system

CASTED completed research reports including *National Innovation Index Report 2020 (English version)*, *Evaluation Report on Innovation in China's Enterprises 2020*, *National Innovation Index Report 2021*, and *Monitoring Report on Innovation Capacity*

*of Chinese Regions 2021*. Among these reports, the *Proposal on Deep Adjustment of National Innovation System* was adopted and published by the Publicity Department in *China Top Think Tank Report*.

## Research on Technology Finance

CASTED organized the 19th national survey of venture capital, undertook project research on the priorities of technology finance and relevant policy options; improvement in innovation system with financial support and special programs for financial technology supervision; completed research reports including *Recommendations on Financial Support for High-Level Technology Self-Reliance and Self-Improvement*, *Improving Open Source Governance for Healthy Development of Digital Economy*; and published *China Venture Capital Development Report 2021*, *Technology Finance Ecology Report*, and *China Technology Finance*, which have become landmark reports in the industry.

## Research on national innovation surveys and S&T statistics and evaluation

CASTED has been monitoring and evaluating China's development path towards a tech power in the world; conducted S&T statistics and evaluation research on the governance system of research institutes in the new era; and completed and published research reports including

*National Innovation Index Report 2020 (English version)*, *Evaluation Report on Science and Technology Innovation of Chinese Regions 2021*, *Monitoring Report on Innovation Capacity of Chinese Regions 2021*, *Evaluation Report on Innovation in China's Enterprises 2020*, and *Monitoring Report on Innovation Capacity of Chinese Regular Institutions of Higher Learning 2021*.

## Annual report and major project research for artificial intelligence

CASTED carried out analysis on economic and social development needs and technological development visions, assessed how much impact AI has on employment in different industries, and completed project researches including *Research on the Impact of Artificial Intelligence on Industrial Transformation and Employment*, *Research on Key Issues in Statistics and Monitoring of Artificial Intelligence Innovation Development*, and *Research on Governance System and Capacity Modernization Supported by Next-Generation Information Technology*. We also published *Annual Report on the New-Generation Artificial Intelligence Development in China 2021* and drafted a series of reports of *Frontier Science and Advanced Technology - Artificial Intelligence*.

### Research on key issues in S&T and economic & social development

With researches on the development of emerging industries, supply and value chains, and S&T security, CASTED has provided research support for policies in national technology innovation projects, national S&T planning systems, corporate innovation, S&T risk prevention, and supply chain security. Based on these researches, we have produced the following reports: *Implementation Path and Strategic Thinking for Realizing the Goals of Carbon Peaking and Carbon Neutrality in China*, *Perspective on Digital Technology Empowering Energy Industry and Promoting Energy Digital Transformation*, *National Long-Term S&T Development Strategy for the New S&T Revolution and Industrial Transformation*, *Promoting a New Pattern of Economic "Dual Circulation" with STI*. Meanwhile, we have also published Strategic Emerging Industries Index on a regular basis.

### Research on prediction and assessment of international relations

In view of the Biden administration's S&T policy, Germany's S&T policy towards China in the general election, and S&T policy of China and Latin American countries, CASTED has carried out research on international S&T relations and made prediction and assessment on the international S&T relations to produce a series of research reports.

### Research on rural revitalization

In the critical year of the transition from poverty eradication to rural revitalization, CASTED carried out research on rural revitalization, which resulted in reports including *Special Plan for Innovation-Driven Development of Counties in the "14th Five-Year Plan"*, *Major Challenges in Comprehensively Promoting Rural Revitalization - Research on the Development Path of Rural Innovation System*, *STI Action Plan for Building a Common Prosperity Demonstration Area with High-Quality Development*, paving the way for rural revitalization in China.

### Building think tank research support platform

CASTED developed an integrated management system for data resources and built a knowledge base, a tool library and a methodology library of data resources. Meanwhile, we also developed an intelligent search and analysis system that focuses on "search engine + knowledge mapping", aims at dynamic tracing and integrated analysis of data resources, and features digitalization, intellectualization and cyberization; and built a "multi-functional and integrated" think tank research support platform to support think tank research and S&T intelligent decision-making services, so as to improve the research efficiency and outcome quality for think tanks.

## 2.3 For innovation layout in major strategic regions

### Offering S&T consultation services across the country

CASTED participated in the drafting of the "14th Five-Year Plans" of Hubei, Zhejiang, Hainan, Lianyungang of Jiangsu, Mianyang of Sichuan, etc.; proposed advices on the establishment of national STI centers during the "14th Five-Year Plan" period for cities including Beijing and Shanghai; provided consultation for the old northeastern industrial bases in Liaoning and Jilin on how to support economic revitalization with S&T; and offered support to the regional STI-driven development across the country.

- Completed the research of *Policy Recommendations for Promoting Beijing–Tianjin–Hebei Synergistic Development to a Higher Level*
- Conducted researches including *Innovation System to Support Basic Research, Applied Basic Research and Free Exploration in Beijing during the "14th Five–Year Plan" Period* and *Study on the Transformation and Upgrading Strategy for Zhongguancun National Innovation Demonstration Zones*
- Completed the research of *Evaluation on STI Capacity of Hebei Province*
- Undertook the research of *Erdos STI Development Plan in the "14th Five–Year Plan" Period*

- Conducted the research on *Blazing the Trail for S&T and Industrial Development of Yangtze River Delta with G60 STI Corridor*
- Completed the following researches: *STI to Drive and Support High–Quality Growth and Development of Common Prosperity Demonstration Zone in Zhejiang Province*, *Zhejiang S&T Plans for the "14th Five–Year Plan" Period*, and *Zhejiang Medium and Long Term STI Development Plan (2021–2035)*
- Undertook the research of "14th Five–Year Plan" for *Industrial Development Planning of High-Tech Industry Development Zone in Lianyungang*
- Completed the research of "14th Five–Year Plan" for *STI Planning of Jiangbei New Area in Nanjing*
- Undertook the research of *Evaluation and Strategies for Supporting High Quality Development with STI in Ruian City*

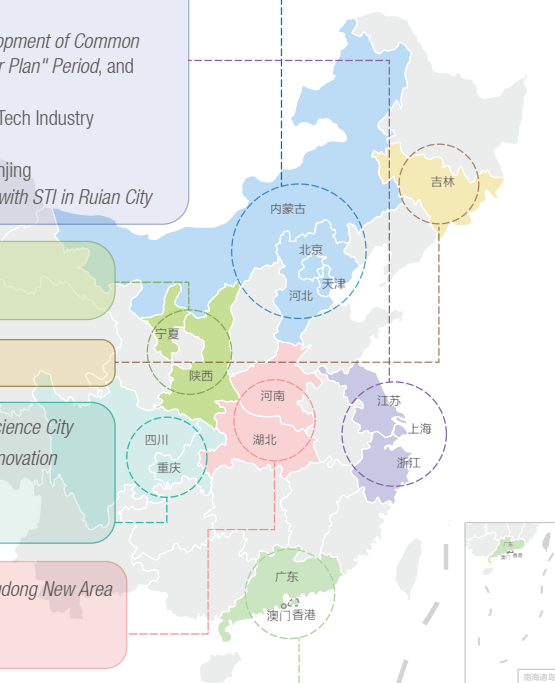
- Conducted research on innovation development of Xixian New Area
- Conducted research on building pioneer area for east-west S&T cooperation in Ningxia

- Participated in the research of *Proposal on How to Build Jilin into an Innovative Province*

- Conducted research on the *Zoning Plan for Life Science Innovation Zone in West (Chengdu) Science City*
- Conducted research on the *Development Strategy and Planning for National Pig Technology Innovation Center (Chongqing)*
- Undertook the research of *Dazhou STI Development Plan in the "14th Five–Year Plan" Period*

- Undertook the research of *STI Development Plan in the "14th Five–Year Plan" Period at Zhengdong New Area*
- Completed the research on the *Master Plan for Wuhan STI Development*
- Participated in the research on building regional STI center in Wuhan

- Completed research on *Challenges in and Policy Proposals for Promoting STI Development in the Guangdong–Hong Kong–Macao Greater Bay Area* and *A General Guideline on Supporting Guangdong–Hong Kong–Macao Greater Bay Area to Achieve High Quality Development with STI as the Major Engine*
- Completed the research on *Major Strategic Issues of STI in Shantou's "14th Five–Year Plan" and the "14th Five–Year Plan" for STI Planning of Shantou*
- Completed the research on *Guangzhou Innovation Index*



## 3.1 Research for policy-making

CASTED delivered 50 pieces of think tank insights and news to *Think Tank Report*, and drafted 12 issues of work briefs of think tanks. We also delivered 36 issues of *China-U.S. S&T Special Report* and 10 issues of *Special Report on Self-Reliance and Self-Improvement*. Our reports on China-US power comparison, trends in US alliance system, national innovation system development, and response to US-EU TTC mechanism, etc. were published in the *China Top Think Tank Report*.



We developed more than 20 research reports with topics including an encouraging environment and atmosphere for free exploration of innovations, financial support for high-level S&T self-reliance and self-improvement, further combination between technology and finance to speed up development of emerging industries, six themes and seven discoveries in strategic competition between the US and China, accelerating deployment and development of regional STI centers, and enhancing China's S&T independence on its way to become a world S&T power, etc. In 2020, we submitted 20 research reports and special reports to the Ministry of Science and Technology, including reports on the practices of major countries in promoting basic research, enhancing national strategic S&T strength, and spotlight on the withdrawal of foreign-funded R&D centers.



We have taken the initiative to expand the scope of reports, and produced a variety of special research reports such as *Frontier Science and Advanced Technology*, *Artificial Intelligence and Advanced Energy*.





# Research Achievements

## 3.2 Research of academic influence

CASTED published 21 scholarly monographs, including *Blockchain Technology Application and Practices*, *Technology Finance: Theory and Practice*, *Promoting Innovation with Public Research in the 21st Century - International Evaluation on Knowledge Transfer Policies*, *Role of Foreign-Funded R&D Institutions in the Development of China's Innovation System*, *Research Report on the Development of S&T Talents in Shanghai*, etc. We also completed the translation and published the Chinese version of *Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation*, which attracted wide attention from the society.

We published a total of 96 papers on a variety of journals, including *Research on Spillover Effects of Public Expenditure on Poverty Reduction in Rural China*, *Moving Towards Systematic Forecasting: The History and Practice of Technology Forecasting in China*, *How Working Hours Affect the Physical and Mental Health of S&T Professionals: An Empirical Analysis Based on Survey Data from Beijing*, *Development Mechanism, Influencing Factors and Countermeasure Suggestions for Industrial Intelligence Development*, *Application of Blockchain Technology in National Governance: Scenarios and Suggestions*, *Promoting Basic Research: the New Whole Nation System Needs Refined Adjustment*, *Facilitating Young Talents to Reach the "Peak of Creativity" as Early as Possible*, *Research Fund: Use it Better and Make it Better to Use*, *Energy-Based City Transformation in the New Development Stage: Constraints and Promotion Strategies*, *The Systematic Risks and Countermeasures of Science and Technology Development in China*, *On the Need of Artificial Intelligence Technical Regulation in the Man-machine Symbiosis Society*, and *Research on the Focus and Path of S&T Self-Reliance and Self-Improvement: Supporting the New Development Pattern and Leading High-Quality Development*.

## 3.2 Research of social influence

In 2021, the publications and achievements of CASTED included: *Evaluation Report on Science and Technology Innovation of Chinese Regions 2021*, *Monitoring Report on Innovation Capacity of Chinese Regions 2021*, *Evaluation Report on Innovation in China's Enterprises 2020*, *Monitoring Report on Innovation Capacity of Chinese Regular Institutions of Higher Learning 2021*, *Annual Report on the Next-Generation Artificial Intelligence Development in China 2021*, *China Science and Technology Indicators 2020 (Yellow Paper)*, *China Science and Technology Indicators 2018 (English version)*, *China Venture Capital Development Report 2021*, and *Technology Finance Ecology Report*.

Closely following up with the public perceptions, CASTED seized the window period and published more than 40 articles on trending topics such as S&T self-reliance and self-improvement, the strategic game between China and the United States, and S&T talents. Meanwhile, we also accepted more than 30 interviews with the mainstream media such as *Guangming Daily*, *Science and Technology Daily*, etc.



# International Exchanges and Cooperation

## 4.1 Expansion and development of institutional cooperation

### Maintained connections with US think tanks

To enhance mutual trust, since 2019, CASTED has been co-organizing China-US S&T Think Tank Dialogues with US think tanks. In 2021, dialogues concentrating on topics of common interests were held every month and over ten experts were invited each time.

### Held the Belt and Road Seminar in 2021 Pujiang Innovation Forum

Discussed S&T cooperation in fields such as digital economy, health and green development with think tanks of Belt and Road countries, including Saudi Arabia, Pakistan, Serbia and Thailand. By doing so, CASTED has explored channels and plans for STI development path with Belt and Road countries.



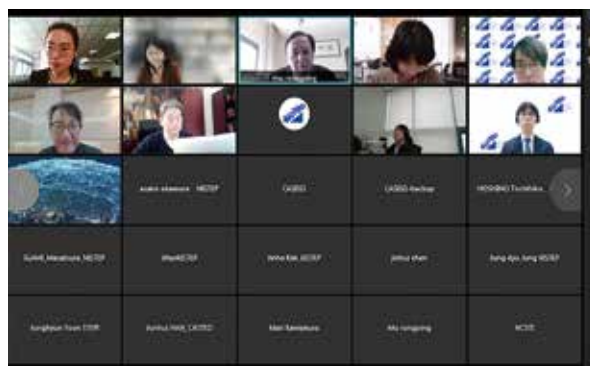
### Co-organized the 6<sup>th</sup> China-UK Innovation and Development Forum with University of Oxford

With the theme of "Green Innovation and Inclusive Development", the Forum was participated by well-known experts from the University of Oxford, the University of Surrey, the Development Research Center of the State Council of China, the Chinese Academy of Sciences, the China-Britain Business Council, Tsinghua University and Zhejiang University. Experts exchanged ideas and expanded space for China-UK scientific and technological cooperation.



## Co-hosted the 16th China-Japan-Korea Trilateral Science and Technology Policy Seminar.

The seminar focused on topics including "data analyses related to STI human resources", "S&T foresight and future societal vision in the wake of the COVID-19 pandemic", "measuring innovations and innovation activities in a changing world" "impact of the COVID-19 in scientific research" and "digital transformation and EBPM". Researchers from the five institutions gave reports and thematic discussions to share the latest developments in science and technology strategies and policies of China, Japan and South Korea.



## Participated in the International Symposium on "Promoting the Participation of Public R&D Institutions in Innovation – The Role of Knowledge Transfer Policies" co-organized by WIPO and other institutions.

More than 1,000 experts from the intellectual property field from all over the world attended the conference, and President Hu Zhijian delivered a keynote speech and shared China's experience in this field.



## 4.2 Enhancement of international cooperative research and academic exchanges

### Carried out extensive cooperative international researches

Undertook the research on Serbia's artificial intelligence development strategy, and drafted Serbia's 2020-2030 Artificial Intelligence Application Capability Development Strategy. Carried out seminar with the FAFO Institute of Norway on "Research on the Development of the Western Region and the Living Conditions of Residents". Completed "China's Civil Science and Technology Support Policy and China-Korea Science and Technology Cooperation Program".

### Actively participated in international academic exchanges

Co-organized a seminar with the Korea-China Center for S&T Cooperation; participated in the 6th "China-ASEAN International Training Conference for Technical Managers"; promoted cooperation and exchanges with the World Intellectual Property Organization, the Technology Management and Development Center of the University of Oxford, the RAND Corporation, the FAFO of Norway, and the Karlsruhe Institute of Technology in Germany.



## 4.3 Responsible performance of CISTRAT

### Held the 9th International Workshop of CISTRAT

The CISTRAT 9th International Workshop was held to provide online courses to Belt and Road countries and under-developed regions. A total of 20 international students from Egypt, India, Mongolia, Pakistan, Serbia, Cambodia, Brunei and Malaysia were enrolled, and more than 100 domestic students from 13 think tank research consortium member units were enrolled. Experts from Tsinghua University, Fudan University, Beijing Academy of Sciences, Kuaishou, Alibaba Cloud were invited to give online lectures. The lectures focused on topics including international cooperation against the pandemic, S&T evaluation system, strategic emerging industries, S&T talent management, poverty alleviation through S&T, S&T foreign exchanges, etc.





## 5.1 Research cooperation with domestic think tanks

**CASTED has promoted horizontal cooperation among think tanks. We have actively strengthened inter-institutional cooperation, signed strategic cooperation agreements with Shanghai Academy of Sciences and Huawei Technologies Co., Ltd., explored cooperation channels, established and improved cooperation mechanisms, and carry out joint researches.**

### Extensive research cooperation

- Jointly completed a total of 19 related projects with Tsinghua University, Renmin University, Beihang University, Central University of Finance and Economics, Ocean University of China, etc., as well as scientific research institutes such as the Chinese Academy of Sciences and the China Institute of Standardization, and non-governmental think tanks such as Elsevier and Beijing Great Wall Enterprise Strategy Research Institute. The projects focused on Sino-US relations, diversified resource allocation in basic research, a new generation of information technology, etc.
- Cooperated with Shanghai Institute for Science of Science, Shenzhen Municipal Government Research Center, Zhejiang Strategic Institute, Jiangsu Strategic Institute, Hebei Science and Technology Information Institute, Ningxia Science and Technology Development Strategy and Information Institute, etc., to carry out research projects such as "Shanghai's Path and Initiatives to be the First to Achieve Carbon Peaking with STI", "Evaluation on STI Capability of Hebei", "Evaluation on Jiangxi as Innovative Province" and "Research on East-West S&T Cooperation", and to share the research outcomes with each other.

## 5.2 Co-organization of academic events

**As the supporting organization of the Academic Committee of Pujiang Innovation Forum, CASTED hosted the Policy Sub-Forum and the "Belt and Road International Symposium", with the theme of "Bridging the Gap: Policy Options for Sustainable Innovation" in 2021; and compiled the outcomes of the 2021 Pujiang Innovation Forum.**



# Research Network and Collaboration

- Co-organized with institutions including Beijing Academy of Science and Technology the "Global STI Think Tank Forum under Zhongguancun Forum". Experts from CASTED accepted media interviews and shared insights with the media during the forum.
- Co-hosted with institutions including Shanghai Institute for Science of Science the 16th National Symposium on Technology Foresight in Xiangyang, Hubei. Vice President Sun Fuquan presented the theme report on "Adhering to Innovation-Driven Development in the 14th Five-Year Plan Period and Shaping New Advantages in Comprehensive Development", while other researchers from CASTED delivered a series of keynote reports on "New Theory and Methodologies of Technology Foresight", "Research on Regional Development of National Frontier Technologies", and "Practice of Technology Forecasting in National Medium and Long-term Science and Technology Development Planning", etc.



## 5.3 Training sessions

CASTED has actively implemented the previous initiative of "Belt and Road" STI Think Tank Cooperation Network; received invitation from Pakistan Economic Cooperation Organization Science Foundation (ECOSF) to offer lectures in the training program of "STI Policies and Prospects of BRI

Countries"; and received invitation to offer lectures at the 6th "China-ASEAN International Training Conference for Technical Managers".

Offered training sessions at the following programs: training program co-hosted by the Ministry of Science and Technology (MOST) and the United Nations Commission on Science and Technology for Development (CSTD); themed training on "Innovation Capacity and System Building" for S&T personnel of Yan'an; and the international training program on development and management of S&T parks of the "Belt and Road Initiative".

## 5.4 Associations

**CASTED is authorized to administrate two national associations, including China Sodality of Scientific and Technological Institutes and China Science and Technology Indicator Research Association.**

### China Sodality of Scientific and Technological Institutes

Established in 1987, China Sodality of Scientific and Technological Institutes aims to unite and liaise with scientific and technological institutes and researchers nationwide to carry out exchanges and research activities on the reform, development and management of scientific research institutions. The Sodality has organized the sodality workshop among the national scientific and technological institutes, the 21st Report Meeting on S&T Development and Reform, so as to offer a platform for the exchange of work experience among the science and technology institutes.

### China Science and Technology Indicator Research Association

Established in 1995, China Science and Technology Indicator Research Association has played an active role in promoting the research and application of S&T indicators for management and decision-making. It has released the Research on Science and Technology Indicators, organized training sessions for China Science and Technology Indicator Research Association, offering lectures to researchers in S&T statistics and indicators nationwide.

# Disciplines and Team Members

## 6.1 Research team

By December 2021, CASTED had 133 permanent employees, 84 with postgraduate degrees or above (64 PhDs), accounting for 69% of all employees. There are 61 cadres with senior professional and technical qualifications, accounting for about 85% of the research staff. We also had 7 visiting research fellows from other domestic S&T think tanks.

### Exploring in the Senior Consultant system

We have hired high-level experts to serve as senior consultants for CTTT to lead research on major issues and provide high-level decision-making advice, which plays an important role in improving research quality.

### Optimizing and adjusting research organization

CASTED has been committed to solving the problems in department scope setting and division of disciplines, which resulted in a situation where research efforts cannot be properly organized. To do so, we have decided to focus more on major research directions, adjust the internal structure, and explore the organization and management of a new type of think tank with Chinese characteristics. After the adjustment, we now have nine research institutions, with a good combination of theory research, development tracking and analysis on major international and domestic issues.

## 6.2 Disciplinary features

**CASTED consists of nine research institutions, including:**

**1**

### Institute of General Research

Formulates schemes and annual plans for CASTED as a China Top Think Tank; conducts pre-research, design, subject selection and demonstration, as well as comprehensive integration of important achievements made by the think tank; carries out research on national science and technology development strategies and planning, etc.; and performs day-to-day operations of the National Consultation Research Center for Science and Technology Decision-Making.

2

### **Institute of Science and Technology Innovation Theory**

Undertakes research on the significant statements from General Secretary Xi Jinping on science and technology innovation; understands the latest international progress on the important theories in science, technology and innovation from the perspective of China's STI practice; undertakes research on the characteristics, rules and trends of China's STI, and builds a theoretical system of STI for China.

3

### **Institute of Innovation and Development**

Undertakes research on development strategies and planning as well as innovation policies and management in agriculture, manufacturing and services in response to major strategic agendas in S&T development and economy and society development; and conducts research on major topics such as the social environment of S&T development, as well as S&T and ecological civilization.

4

### **Institute of Regional Science and Technology Development**

In response to major S&T agendas such as regional development strategies as well as S&T development and urbanization of key regions and counties, Institute of Regional Science and Technology Development undertakes research on major topics such as regional innovation strategies and planning, innovative industrial clusters, development strategies for high-tech industrial parks, innovative provinces (cities), innovation centers, and science and technology support for rural revitalization.

5

### **Institute of Frontier Science and Emerging Technology**

Undertakes comprehensive and strategic research on the new technology revolution, technological trends, international comparisons, development path and supporting policies, with a focus on basic research, frontier technologies, key and core technologies, disruptive technologies, advanced and applicable technologies and other forward-looking topics that have important implications for national development.

6

### **Institute of Science and Technology Governance and Talent**

In response to the demand of innovation-driven development for governance capacity, Institute of Science and Technology Governance and Talent undertakes research on major strategic topics such as STI governance, S&T system reform, national innovation system building, S&T talents, S&T investment, technology finance, technology security, technology laws, public research institutions and corporate technology innovation.



7

### Institute of Science and Technology Foresight and Statistics

Undertakes research on S&T needs of medium and long-term economic and social development, the S&T developments at home and abroad, and the selection of key national technologies; conducts studies on theoretical methodology and applications of S&T statistics, innovation surveys and S&T indicators; and monitors, analyzes and evaluates S&T activities nationwide.

8

### Institute of International Scientific and Technological Relations

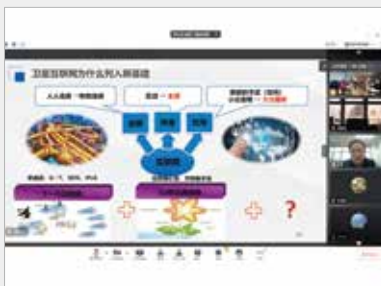
Targeting at changes in global geopolitics and rules of economic trade, changes in the global S&T landscape, and the S&T relations of China with major countries and regions, Institute of International Scientific and Technological Relations undertakes research on the overall environment, development trends, development strategies, key areas of cooperation, key policy measures, and approaches of cooperation.

9

### Institute of Intelligent Science and Technology Innovation Policy (ISTIP)

Undertakes the development of research infrastructure including methodology library, tool library and database; explores research tools such as big data and simulation; and provides all-round support for the information technology and intelligence development of strategic research.

## 6.3 Postdoctoral development



The postdoctoral workstation has consolidated the foundation of daily management, and achieved remarkable results in terms of achievement quality, brand building, and foreign cooperation and exchanges. As a talent reservoir, it plays an important role in reserving and selecting talents. The postdoctoral fellows in the station wrote reports, participated in the research, organized 27 high-quality internal learning seminars, and two of them obtained the National Postdoctoral Fund.

1

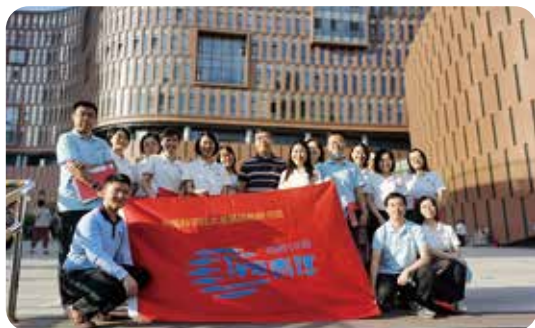
Singing and recitation competition.  
Launch of CASTED MV.



2

CASTED Youth

Based on research and understanding of the young people, CASTED Youth organized surveys and researches for young people to participate.



3

**Organized sports games and outdoor activities  
on a regular basis to enhance cohesion.**



Organized the Green Cycling activity



Organized outdoor activities in autumn 2021



Organized outdoor activities to celebrate  
Women's Day



## Publication

With journals of *Forum on Science and Technology in China* and *China SciTechnology Think Tank* as the platform, CASTED has been continuously raising the influence of think tank research in the field of S&T strategy and innovation.



### *Forum on Science and Technology in China*

focuses on frontier and theoretical development, and provide academic support for the construction of S&T think tanks. It has been a Chinese Social Science Citation Index Source Journal (CSSCI), Peking University Chinese Core Journal, Chinese Social Science Comprehensive Evaluation AMI Core Journal, RCCSE Chinese Academic Journal, and China Science and Technology Paper Statistics Source Journal.



### *China SciTechnology Think Tank*

focuses on S&T strategies, policies and management. It has become one of the leading platforms for publishing achievements from S&T think tanks.



WeChat official account  
of *Forum on Science and  
Technology in China*



WeChat official account  
of *China SciTechnology  
Think Tank*

## WeChat Official Account



The WeChat platform "China Academy of Science and Technology for Development" aims to bring together ideas and wisdom in STI. Since the launch of the official account, the number of visits and attention has continued to rise. As the official platform of CASTED, it regularly publishes research reports, expert opinions, academic trends and science and technology policies, providing new channels for the development and publicity of national high-end think tanks.

## WeChat Account for CASTED Youth



The "CASTED Youth" group actively plays the role of connecting young people, planning activities, building communication platforms, carrying out learning, discussion and exchange activities, providing support for the growth of the young, and contributing to the construction of CASTED as one of the top think tanks.





**Chinese Academy of Science and  
Technology for Development**

No.8 Yuyuantan South Road, Haidian  
District, Beijing 100038.

<http://www.casted.org.cn>