

The First Geographic Big Data Competition of China (2024)

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Abstract: Approved by the organizing committee of the “Data Factor x” competition of the National Data Administration, the Geographical Society of China is hosting the “Geographic Big Data Competition (2024)” as a sub-competition event of the “Data Factor x” competition of China. The competition focuses on the field of technological innovation (Track 6), with the theme of “Geographic Data-Driven Technology, Educational Innovation, and Social Sustainable Development”. It is divided into five questions: the collection, publication, and sharing of geographic data, the development of geographic data supported technology models, geographic data assisting scientific research and technological innovation, geographic data accelerating the exploration of new paradigms in scientific research, and geographic data education and science popularization. The competition was officially launched in July 2024 and a series of procedures were successfully completed from July to September, including application, qualification review, preliminary round, final defense, evaluation, public announcement, and award presentation. Of 33 teams from 39 organizations and 136 participants, 12 won awards. This competition has played a positive role in promoting technological innovation and sustainable development of society.

Keywords: Data Factor x; competition; Geographical Society of China; geographic big data; technology innovation; 2024

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1 Introduction

In the current wave of technological revolution and industrial transformation, the importance of data is increasingly stronger, becoming one of the core production factors. To achieve the amplification effect, superposition effect, and multiplication effect of data, promoting the construction of a digital economy system centered on data, is the key path to achieving high-quality economic development. In order to thoroughly leverage the role of data in promoting economic and social development, the Chinese government has provided relevant work guidance. Based on this, the National Data Administration and 17 departments jointly issued the “Data Factor x” Three-year Action Plan (2024–2026) on December 31, 2023, aiming to fully leverage the multiplier effect of data factors, and empower economic and social development^[1].

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On this basis, to promote the in-depth application of data in key industries and fields, on May 6, 2024, the National Data Administration, together with the Central Cyberspace Office, and 13 other departments, jointly issued the Notice on Holding the 2024 “Data Factor ×” Competition (GSP [2024] No. 53)¹. The competition is themed “Empowering Data with Multipliers” and revolves around 12 industry sectors deployed in the national “Data Factor ×” Three-year Action Plan (2024–2026), including industrial manufacturing, modern agriculture, commercial circulation, and transportation. Corresponding to these sectors, 12 tracks are set up to explore good technologies and solutions for the developing and utilizing of data factors through competition and data aggregation. The aim is to make more data “active, useful, and dynamic”. This competition is the first in China to focus on the developing and applying of data factors, and is divided into local competitions and national finals.

As an authoritative academic institution in the field of geography nationwide, the Geographical Society of China (GSC) deeply recognizes the important role of data in geography. Data not only provides fundamental support for geographical research but also promotes the development of geographical theory and innovation in practical applications. Given this, the society attaches great importance to data and established the Geographic Big Data Working Committee in 2018 to promote the construction of the big data geography discipline system, strengthen the construction of the big data geography talent team, and promote the widespread application of geographic big data in various fields of geography and social sustainable development. This measure marks the establishment of the national academic team for geographic big data in China, aiming to unite scientific and technological workers in the field of geographic big data nationwide, implement the national big data strategy, and add glory to the GSC, which has a hundred-year history^[2].

According to the National Data Administration’s 2024 “Data Factor ×” Competition notice, GSC entrusted its Geographical Big Data Working Committee to participate in the local sub-competition. In May 2024, it applied to host the 2024 Geographic Big Data Competition, to promote the widespread application of geographical big data, explore the potential and application prospects of geographical data in technology, education, and social sustainable development, and accelerate the innovation and development of modern geographical research methods.

According to the “Announcement on the Qualification Review Results of the National Finals of the 2024 ‘Data Factor ×’ Competition”, the Geographic Big Data Competition (2024) hosted by the GSC has been identified as one of the first third-party events to obtain the recommendation qualifications for the national finals of the competition. The competition is hosted by the GSC and organized by its Big Data Working Committee. It was successfully held from July to September 2024 and completed smoothly.

This competition focuses on technological innovation in the “Data Factor ×” field (Track 6). The competition questions include: the collection, publication, and sharing of geographic data, the development of geographic data-supported technology models, geographic data supporting scientific research and technological innovation, geographic data accelerating the exploration of new paradigms in scientific research, and geographic data education and science popularization.

2 Competition Organization

2.1 Competition Launch

According to the notice of the 2024 “Data Factor ×” organizing committee the GSC issued the first notice of the Geographic Big Data Competition (2024) on July 12, 2024, officially launching the competition. The competition leadership group, qualification review and

¹ National Data Administration. Notice on holding the 2024 “Data Factor ×” competition (GSP [2024] No. 53). https://www.nda.gov.cn/sjj/zwgk/tzgg/0830/20240830151940657969089_pc.html.

evaluation group, supervision group, and secretary group were established to determine the competition's specific schedule and evaluation rules².

(1) Track: "Data Factor x" Technology Innovation Field (Track 6)

(2) Competition theme: Geographic Data-Driven Technology, Educational Innovation, and Social Sustainable Development

(3) Competition questions setting: Five topic groups, i.e.,

- 1) The collection, publication, and sharing of geographic data
- 2) The development of geographic data-supported technology models
- 3) Geographic data supporting scientific research and technological innovation
- 4) Geographic data accelerating the exploration of new paradigms in scientific research
- 5) Geographic data education and science popularization

(4) Competition leadership team

Team leader: Chen, Fahu, Chairman of the GSC, academician of the CAS Member

Team members:

Li, Xiaojuan, Vice Chairman of the GSC and Professor at Capital Normal University

Lyv, Guonian, Executive Director of the GSC and Professor at Nanjing Normal University

Song, Changqing, Vice Chairman of the GSC and Professor at Beijing Normal University

Zhang, Guoyou, Vice Chairman and Secretary General of the GSC

(5) Qualification review and evaluation team

Team leader: Liao, Xiaohan, Director of Geographic Big Data Working Committee of the GSC, and Professor in Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR-CAS)

Team members:

Li, Manchun, Deputy Director of Geographic Big Data Working Committee of the GSC and Professor at the School of Geography and Ocean Science, Nanjing University

Chen, Lijun, Deputy Director of Geographic Big Data Working Committee of the GSC, Senior Engineer of the National Geomatics Center of China

Zhang, Songmei, Deputy Director of Big Data Development Center, Ministry of Agriculture and Rural Affairs of the People's Republic of China

Li, Guoqing, Director of National Earth Observation Data Center, and Professor of Aerospace Information Research Institute, Chinese Academy of Sciences

Wang, Liming, Professor of IGSNRR-CAS

Wang, Junwei, Engineer at Beijing International Data Exchange

(6) Competition supervision team

Team leader: Fu, Bojie, Chairman of the Board of Supervisors of the GSC, academician of the CAS Member

Team members:

Chu, Mingruo, PhD student of IGSNRR-CAS, chairman of the graduate student union

Han, Lei, PhD student at Sun Yat-Sen University

Zhang, Yichuan, PhD student at Liaoning Normal University

Li, Kai, postgraduate student at Jiangsu Normal University and the chairman of the graduate student union

Wu, Jiashuo, postgraduate student at Southwest Jiaotong University and the president of the student union

Guo, Haohao, postgraduate student at Shanxi University

Ma, Feng, undergraduate student at Qinghai Normal University and the president of the student union

(7) Events schedule and evaluation rules

1) Schedule

July–September 2024

² Empowering data with multipliers, the 2024 "Data Factor x" competition held by the Chinese Geographical Society.
<https://geodoi.ac.cn/gsc-bdwc/2024/BigDataCompetition/>.

- July 12th: Announcement No.1 was issued and application to begin
- July 30th: Deadline for team application
- August 5th: Release of approved list of participating teams
- August 6–25: Preliminary round judges
- August 26–30: Final defense
- August 31st September 7th: Online public voting
- September 8–14: Comprehensive evaluation to determine the winning team for the finals
- September 15–19: Final results announcement
- September 27th: Awards ceremony

2) Rules

Uniqueness: Teams participating in the final of the Geographic Big Data Competition (2024) are not allowed to participate in other regions. Repeated participants will have their eligibility for this competition canceled.

Topic direction: Each participating project is limited to one topic direction, and once the topic direction is selected, it cannot be changed.

Team members: Each team is composed of 1–5 people who abide by the law and have not committed any disciplinary violations in the past 5 years (July 2019 to July 2024). The preliminary team members cannot be changed and all will participate in the final.

Intellectual property: All works submitted by participating organizations should be original creations of the team/individual, and must strictly comply with relevant laws and regulations such as the Data Security Law and the Personal Information Protection Law. They have not infringed any third-party intellectual property rights, including but not limited to copyrights, patents, trademarks, and other intellectual property rights. Do not disclose personal privacy or sensitive information. If the work involves the use of third party resources, legal authorization has been obtained and the source will be clearly marked in the submitted materials.

Highlight innovation: The participating projects are required to highlight innovation that have already been practically applied, achieving good economic or social benefits, including but not limited to technologies, products, solutions, etc., with independent intellectual property rights.

Integrity in competition: Participating teams and individuals shall not engage in any form of cheating, including but not limited to forging data, greeting and guiding ratings, maliciously interfering with other participants, etc., to ensure the authenticity and fairness of the competition process. If there are any violations of the requirements of the 2024 “Data Factor x” competition during the event, the participation qualification will be canceled.

Presentation content: The final content of the participating teams should include but not be limited to the competition report, project presentation, including project overview, solutions, application value and benefits, business model, sustainable development prospects, team composition, etc. The competition content is open to the public.

Presentation format: Encourage teams to adopt different report formats, such as PPT presentations, videos, text, audio, animations, etc., to fully and accurately present the core content of the project. The reporting time is 20 minutes.

Scoring criteria: The competition combines expert review and online public voting. The scoring criteria are shown in Table 1.

Table 1 Scoring table for the finals of the Geographic Big Data Competition (2024)

Scoring points	Review subject	Score
Innovation point	Experts Review Team	20
Influence in the field of geographic big data ×	Experts Review Team	10
Ecological, economic, and social benefits	Experts Review Team	20
Sustainability	Experts Review Team	10
Team	Experts Review Team	10
Material integrity	Experts Review Team	10
Online selection	Public review	20
Total	Experts Review Team, Leadership Team	100

2.2 Preliminary Selection

As of July 30th, nearly 40 teams from over 50 units across the country have participated in the application process. After strict review and preliminary evaluation by the qualification review and evaluation team of the competition, 33 approved teams were selected (Table 2), involving 136 contestants and 39 units, including 5 scientific research institutes, 22 universities, 7 enterprises, 3 government agencies, 1 middle school, and 1 professional association.

The preliminary selection results will be announced on August 5th.

Preliminary round evaluation will be taken from August 6 to25.

Table 2 List of teams selected for the preliminary round

Competition questions	Team	Topic	Members	Participating units
The collec- tion, publica- tion, and sharing of geographic data	Team 1	The Chinese typical lakes water body optical parameters and surface temperature Star-Ground Synchron- ous measurement dataset ^[3]	Zhou, X., Tao, Z., Zhai, M. J., Li, R. X., Liang. H. Y.	Aerospace Information Research Institute, Chinese Academy of Sciences
	Team 2	The Chinese oasis high-precision dataset ^[4]	Gui, D. W., Lin, J. W., Xue, D. P., Cui, B. C., Zhang, S. Y.	Xinjiang Institute of Ecology and Geography Chinese Acad- emy of Sciences
	Team 3	High-resolution crop distribution dataset in China ^[5]	Yuan, W. P., Fu, Y. Y., Shen, R. Q., Peng, Q. Y, Dong, J.	College of Urban and Environ- mental Sciences in Peking Uni- versity, Sun Yat-sen University School of Atmospheric Sciences, School of Geomatics in Zhejiang University of Water Resources and Electric Power IGSNRR-CAS
	Team 4	Mongolian Plateau resource and environmental science data publica- tion and support for regional sus- tainable development ^[6]	Wang, J. L., Altan- sukh, O., Xu, S. X., Li. K., Wei, H. S.	
	Team 5	Yanchi Tan Sheep Huamachi Town arid grassland case dataset on eco- system protection and sustainable development ^[7,8]	Zhang, M. X., Sun, Y. W., Li, B., Wu, G. H., Wang, Y. J.	Ningxia University, Agriculture and Rural Affairs Bureau of Yanchi, Yanchi Tan Sheep Group of Ningxia
	Team 6	Publication and sharing of global change science research data ^[9]	Zhu, Y. Q., Shi, R. X., Ma, J. H., Li, L. M.	IGSNRR-CAS
	Team 7	Dataset of GI environment protec- tion and sustainable development of Black Rice and Crested Ibis (<i>Nippo- nia nippon</i>) habitat in Caoba Village, Yang County, Shaanxi Province of China ^[10,11]	Wang, Y. S., Liu, Y. S., Zhang, X. R.	IGSNRR-CAS, Chang'an Uni- versity
	Team 8	Construction of a geological science data publishing system ^[12]	Wu, X., Li, X. L., Shang, Y. T., Jia, L. Q., Meng, J.	Development Research Center of China Geological Survey
	Team 9	Technology empowers environmen- tal protection and sustainable agri- cultural development in Panshi, Jilin ^[13,14]	Fu, J. Y., Du, X. L., Gao, Y., Zheng, Q. S.	IGSNRR-CAS, College of Plant Science, Jilin University, Jilin University Black Soil Research Institute, Nanjing Agricultural College
The develop- ment of geo- graphic data supported technology models	Team 10	Comfort object evolution simulation model—Future Amenity Evolution Simulation Model	Liu, Y., Xu, T. T., Xiao, W. J., Chen, H. L., Wu, X. H.	Chongqing University of Posts and Telecommunications, Sun Yat-sen University
	Team 11	Intelligent simulation of reef vegetation growth based on multi-source remote sensing and geospatial big data	Huang, S. H., Su, F. Z., Tang, J. S.	IGSNRR-CAS
	Team 12	Jiuzhou digital intelligence: geospa- tial data corpus and training frame- work supporting the development of large-scale science and technology models	Bai, Y. Q., Chen, Z.	Department of Earth System Science, Tsinghua University

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Competition Questions	Team	Topic	Members	Participating units
Geographic data supporting scientific research and technological innovation	Team 13	Development and service innovation of remote sensing common product and validation platform ^[15]	Liu, Q. H., Wen, J. G., Xiao, Q., Li, J., Du, Y. M.	Aerospace Information Research Institute, Chinese Academy of Sciences
	Team 14	Construction of a large-scale disaster image corpus for intelligent disaster damage extraction ^[16,17]	Zhang, F., Wang, Z. Y., Shen, M., Wu, C. Y.	School of Earth Sciences, Zhejiang University
	Team 15	Agricultural remote sensing big data science and technology innovation for black soil ^[18]	Chen, S. B., Cao, L. S., Li, Z. Q., Ye, Y. H., Lu, P.	Technology and Science Geo-exploration of College, Jilin University
	Team 16	Traffic model development and personalized services based on massive geospatial-temporal data	Wu, G. J., Wu, H. B., Wu, J. Y., Weng, Y. W.	Yiren (Shanghai) Technology Co., Ltd., Tongji University
	Team 17	Spatial optimization layout of rural e-commerce logistics distribution points under mountainous terrain constraints	Tang, S., Chen, Y., Yang, X. L., Liu, Y. W., Gao, H.	Lanzhou Jiaotong University
	Team 18	Impact of tourist consumption behavior on Nitrogen and Phosphorus flow paths in typical agricultural economic systems based on multivariate geospatial big data	Chen, Q. Q., Pang, A. P., Long, Z. D., Liu, Z. H.	Yichun University, Party School Committee of the Nanjing Municipal Committee of C.P.C, Hunan soil and Fertilizer Institute, Yichun City, Yuanzhou District Ecological Environment Monitoring Station, Shenzhen University
	Team 19	National 1 km resolution dataset on medical travel time and hospital accessibility	Xia, J. Z., Ye, P., Ye, Z. Q., Zhong, L. Y., Xia, K. M.	
	Team 20	Empowering autonomous driving data production with large models	Liu, S. X., Yu, C. L., Zhu, J. X., Sun, W. L., Wu, J. B.	Deqing Wuwen Intelligence Technology Co., Ltd.
	Team 21	Production and sharing of the long-term sequential surface cover dataset of China (CLCD) ^[19]	Huang, X., Yang, J.	Wuhan University
	Team 22	Climate change and disaster response research in Papua New Guinea	Ji, L. D., Meng, J. Q.	Liaocheng University
Geographic data accelerating the exploration of new paradigms in scientific research	Team 23	Data-driven high-quality integrated development model for Baoshan Coffee industry ^[20,21]	Duan, R. T., Liu, Y. T., Fu, C. L., Li, X. B.	Baoshan University, Coffee Association of Yunnan Province
	Team 24	Construction of the Chinese geographical and resource journals online cluster supports scientific research and technological innovation ^[22]	He, S. J., Duan, Z. Q., Yu, X. F., Jiang, S. F., He, C. E.	IGSNRR-CAS
	Team 25	Innovative applications of digital remote sensing monitoring in comprehensive governance	Ma, B. P., Jiang, J., Xiao, C. L., Zhang, G., Gu, L.	Deqing County Geospatial Information Center, Zhejiang Guoyao Geographic Information Technology Co., Ltd.
	Team 26	Comprehensive digital base	Xu, Y. T., Liu, M. W., Qiu, K. Y., Hu, C. D.	Zhejiang HI-TARGET Spatial Information Technology Co., Ltd.
	Team 27	Big Data-driven Geographical Indications Environment & Sustainability ^[23]	Liu, C., Song, X. F., Wang, Z. B., Zhu, X. G., Wang, K.	IGSNRR-CAS, Beijing Tianhang Huachuang Technology Co., Ltd., Fengxian County Big Data Center
	Team 28	Geological data mining and development support for the selection of prospecting rights blocks	Qi, F. Y., Gao, X. Z., Niu, Y. C., Kui, H. T., Zheng, X.	Development Research Center of China Geological Survey
	Team 29	Regional decision-making agents: a new paradigm for governance and application of geospatial big data and geographical analysis models	Sun, Z., Wang, Y. Z., Yu, K. L., Mu, F. Z., Xu, Z. W.	School of Geography, Nanjing Normal University

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Competition Questions	Team	Topic	Members	Participating units
Geographic data education and science popularization	Team 30	Scene-based interpretation and aggregation platform for multi-dimensional popularization of geographical knowledge	Zhang, S., Li, Y. F., Fan, G. Z., Guo, Q. J.	Nanjing Normal University
	Team 31	Investigation and future projection of Yulong Snow Mountain Glacier Area changes and their driving factors based on the OGGM Model	Fu, Y. X., Zhu, Y., Shu, F. Q., Xu, J. Q., Wang, S. J.	Shanghai Caoyang Middle School
	Team 32	Exploration and practice of GIS university-industry collaborative education to meet the needs of the times—geospatial big data experimental teaching platform	Cheng, C. X., Liu, H. P., Shen, S., Xi, L. X., Wang, L.	Beijing Normal University, Beijing SuperMap Software Co., Ltd.
	Team 33	A new approach to high school geography teaching based on Web_GIS	Zhang, X. Y., Cheng, Y., Wang, S., Liu, C. X., Hao, Y. X.	Henan University

2.3 Finals

Based on the team collection, qualification review and preliminary contest, the final of the Geographic Big Data Competition (2024) was opened on August 26, 2024. Chen, Fahu, academician of the CAS Member, president of the GSC, and leader of the leading group of the Geographic Big Data Competition (2024), announced the opening of the competition. The whole final lasted five days and ended on August 30.

Online voting will be held from August 31 to September 7. As of September 7, a total of 26,992 people from 33 provinces (autonomous regions, municipalities, special administrative regions including Hong Kong, Macao, Taiwan) of China and 17 other countries, in which there are 26,305 voters from China and 687 voters from the world else, participated in the voting.

From the voting results, all provinces (regions, municipalities, and special administrative regions) in China participated in the voting (Figure 1). Although the number of participants in Macau and Taiwan was not large, it is gratifying that they were able to pay attention to and participate in the voting in the first data competition. The open public online voting in this competition has also attracted worldwide attention. In addition to Chinese voters, 687 people from 17 countries participated in the vote, including foreign voters from the United States, Japan, India, Australia, Singapore, Malaysia, Thailand, Pakistan, New Zealand, Indonesia, the Philippines, Myanmar, Bangladesh, Canada, South Korea, France, and Russia. Foreign voters account for 2.55% of all voters. Although the proportion is not large, it is enough to indicate that this activity has undeniably impacted on the world. Among them, the United States had the highest number of voters, reaching 303 people, accounting for 44.10% of foreign voters, followed by Japan, with 134 people participating in the vote, accounting for 19.51% of foreign voters (Figure 2).

After evaluation by the panels and public voting from 8 to 14 September, a comprehensive evaluation was conducted from two aspects, with public voting accounting for 20 points and expert review accounting for 80 points. Finally, 5 major awards were selected, including 12 outstanding award-winning teams. The list of award-winning teams is shown in Table 3.

Final results were announced from September 15 to 19.

During the public announcement process, no one or unit raised any objections, and the selection results became effective.

According to the requirements of the National Data Administration, the GSC recommends two teams to participate in the national finals of the 2024 “Data Factor x” Competition, namely the “Big Data-Driven Geographical Indications Environment & Sustainability”

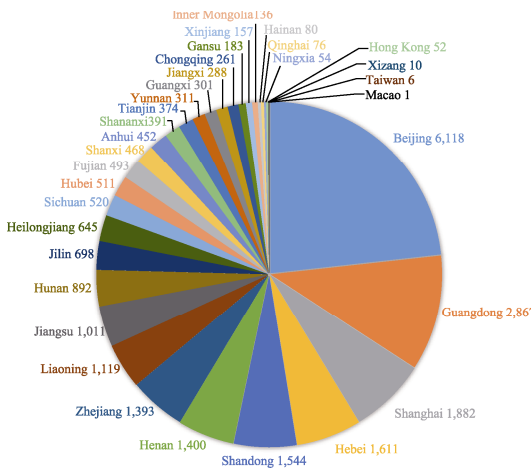


Figure 1 Provincial distribution of voters in China

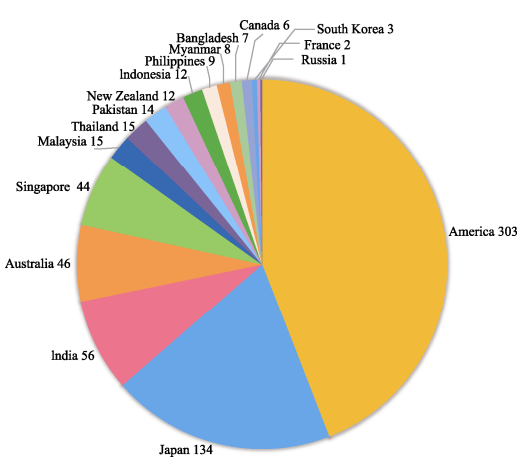


Figure 2 Distribution of international voters

Table 3 List of winning teams from the Geographic Big Data Competition (2024)

Awards	Team	Participating units
The collection, publication, and sharing of geographic data	1	Aerospace Information Research Institute, Chinese Academy of Sciences
	3	College of Urban and Environmental Sciences in Peking University, Sun Yat-sen University School of Atmospheric Sciences, School of Geomatics in Zhejiang University of Water Resources and Electric Power
	4	IGSNRR-CAS
	6	IGSNRR-CAS
The development of geographic data supported technology models	13	Aerospace Information Research Institute, Chinese Academy of Sciences
Geographic data supporting scientific research and technological innovation	16	Yiren (Shanghai) Technology Co., Ltd., Tongji University
Geographic data accelerating the exploration of new paradigms in scientific research	19	Shenzhen University
	24	IGSNRR-CAS
	27	IGSNRR-CAS, Beijing Tianhang Huachuang Technology Co., Ltd., Fengxian County Big Data Center
	29	School of Geography, Nanjing Normal University
Geographic data education and science popularization	30	Nanjing Normal University
	32	Beijing Normal University, Beijing SuperMap Software Co., Ltd.

Note: The specific competition topics and team members are listed in Table 2.

and the “Exploration and Practice of GIS University-Industry Collaborative Education to Meet the Needs of the Times—Geospatial Big Data Experimental Teaching Platform”. Although these two teams were not selected for the national finals, their impact on technological innovation and social progress is profound.

On September 27th, at the 2024 China Geography Conference and 115th Anniversary Commemoration of the Establishment of the GSC, the award ceremony for the competition was held.

The award ceremony was presided over by Professor He, Shujin, Deputy Secretary General of the GSC. Professor Zhang, Guoyou, Vice Chairman and Secretary General of the GSC, announced the list of winners and presented awards to the winning teams (Figure 3).



Figure 3 Professor Zhang, Guoyou announced the competition awards

At the award ceremony, the 12 winning teams from the five major awards of the competition, including the “Geographic Data Collection and Publishing Sharing Award”, appeared one by one. In the presence of more than 3,000 senior and colleagues in the Chinese geography field, they received their award certificates (Figure 4, 5).

On September 28th, the winning teams summarized and shared their findings at the “2024 China Geography Conference and 115th Anniversary Commemoration of the Establishment of the Geographical Society of China” held in Nanjing. Liu, Qinhuo, Deputy Director of the Geographic Big Data Working Committee of the GSC, presided over the event. Representatives from each award-winning team summarized and shared the competition questions, once again showcasing their achievements and results in the field of geographic big data technology innovation to the public (Figures 6).



Figure 4 Winning team representatives receiving awards (part)



Figure 5 Winning team certificates

3 Main Methods and Distinctive Features

Geographic big data is an essential development element of new quality productivity that involves various related fields such as geography, resources, ecology, environment, and sustainable development. From the situation of the 33 teams participating in the finals, the content of the competition is rich, including specific database construction, data platform data center construction, data in teaching, scientific research, sustainable development, social services and other fields, as well as practical cases with strong effectiveness; The data content covers local, regional, national, and global scales. The impact of this competition not only radiated throughout the country, but also received



Figure 6 Group photo of summary and sharing meeting

widespread attention from relevant personnel in 17 countries around the world, including the United States of America, Japan, India, Australia, etc.

To ensure the fair and just conduct of the competition, the organizing committee will strengthen the construction of the competition system based on information openness, ensure that responsibilities are in place, and establish a public selection mechanism for the competition network. The specific method is as follows:

(1) In addition to complying with the participation conditions and requirements of the National Data Administration, the GSC has set up a leadership group, a judging group, and a supervision group to ensure the fairness and impartiality of the competition. The three parties work together to maintain the rigor and transparency of the competition.

(2) All information on the data competition should be fully open. The GSC has established a dedicated website to publish competition information. In addition, the systems and personnel related to the competition, such as the organizational structure and personnel of the competition, the rules and regulations of the competition, the schedule of the competition, the promotion videos of the competition teams, and the results of the competition, are all publicly disclosed and accepted for public supervision and feedback.

(3) To promote the popularity of big data events, increase public participation and interactivity, the competition has set up an 8-day public online voting session. The online public voting adopts anonymous voting method, and each voter (computer IP address) can only vote once, ensuring the transparency and fairness of the event, allowing the audience to directly participate in the selection process of the event, and also helping to increase the audience's attention and stickiness to the event. In addition, by collecting and analyzing the data generated during the voting process, we can better understand audience preferences and provide data support for future event planning and marketing.

The significant feature of this event is the establishment of a bridge between scientific research data and social development needs. The integration of technological data with social needs and the provision of social development solutions have become the prominent features of this event. The content of the competition includes the China oasis database included in the United Nations Environment Programme's Global Oasis Project, as well as the infrastructure and database of the national long-term support for domestically produced satellite ground verification systems.

The most outstanding team in this competition is the Geographical Indications Environment & Sustainability (GIES) team. The team related project was launched in 2021, based on the Global Change Research Data Publishing & Repository System that won the United Nations World Information Summit Award as the infrastructure, and in 2024, it was recognized by the United Nations Food and Agriculture Organization as the leading unit of data storage and technology transfer services for the One Country One Priority Product project of characteristic agricultural products (Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences). This project has benefited more than 600,000 rural residents in 19 typical remote rural cases in 12 provinces (regions) in the past three years (through digital transformation of primary, secondary, and tertiary industries and big data IoT technology), and promoted the localization of landmark habitat related software and hardware equipment. The methods and technologies for promoting sustainable development in this project will gradually be promoted in the One Country One Priority Product plan of the FAO, which involves 85 countries worldwide. 20 countries in Asia, Latin America, Oceania, and Africa have been included in the 2024–2025 GIES Technology Promotion Plan.

4 Discussion

The effective organization of the Geographical Big Data Working Committee of the GSC in accordance with the requirements of the National Data Administration during this event is a favorable guarantee for the smooth progress of this competition. Although the mining and

application of geographic big data have attracted widespread attention from the industry and academia, and have made significant progress in many fields, the overall social attention and participation in this geographic big data competition are still not comprehensive enough. In view of this, the organizing committee of the competition will closely monitor and promote the construction of domestic and international data sharing systems and mechanisms. At the same time, it will be committed to transforming geographic big data into new quality productivity, closely integrating big data, the Internet of Things, artificial intelligence, and sustainable development, further promoting the dissemination of geographic big data among hundreds of schools (townships), strengthening the close integration of data publishing and high-quality development of geographic regions, and focusing on these efforts to further stimulate the industry's enthusiasm and potential ability to explore the value of geographic big data, thereby promoting the influence of geographic big data to a new level nationwide and even globally.

Author Contributions

Jiang, Z. C. was responsible for organizing the event and writing the event report, while Liao, X. H. led the qualification review and expert evaluation of the event; Liu, C. made overall planning and design for the entire event organization work.

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Conflicts of Interest

The authors declare no conflicts of interest.

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