

# A Decade Footprint of the Global Change Research Data Publishing & Repository, World Data System

Liu, C.

Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, 100101, China

**Abstract:** The global change research data publishing and repository has experienced for more than 20 years in China. After more than a decade of preparation work from 2002 to 2013, it was formally launched in 2014. Over the past decade, the infrastructure for global change research data publishing and repository was constructed through two journals plus publishing platform, as well as the data and information application hubs. Based on the data publishing and services, the Geographical Indications Environment and Sustainability (GIES), the decade program for 2021–2030 and the World Geographic Data Encyclopedia were launched. Besides, a new method for the research data assessment, joint data application sub-center and AI calculating sub-center were initialized. It was awarded the WSIS Prize (*e-Science*, Champion, 2018, 2021), and technical supporting partner of the FAO OCOP program.

**Keywords:** global change; data publishing; infrastructure; fill in gap; diving force; a decade

**DOI:** <https://doi.org/10.3974/geodp.2024.04.01>

**CSTR:** <https://cstr.science.org.cn/CSTR:20146.14.2024.04.01>

Global change research is a comprehensive subject which is related to geography, natural resources, ecosystems, environment, cities and villages, natural and human elements, global, regional and local scales, as well as different time period. For such an interdisciplinary, comprehensive, and dynamic discipline, reliable application, cross application, and repeated application of data have become the most important characteristics of disciplinary development. Ten years ago, in order to solve the “bottleneck” problem of data sharing in the development of the discipline, the author created the Global Change Research Data Publishing & Repository. This article briefly lists the footsteps on the road of data publishing and sharing over the past decade.

## 1 Preparation (2002–2013)

In 2002, the author proposed the concept of sharing scientific data on Open Data for a Prosperous Country<sup>[1]</sup>. In 2004, the author proposed the action guide of Data Integration,

---

**Received:** 02-10-2024; **Accepted:** 08-11-2024; **Published:** 24-12-2024

**Author Information:** Liu, C., Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, lchuang@igsnr.ac.cn

**Citation:** Liu, C. A decade footprint of the Global Change Research Data Publishing & Repository, World Data System [J]. *Journal of Global Change Data & Discovery*, 2024, 8(4): 339–346. <https://doi.org/10.3974/geodp.2024.04.01>. <https://cstr.science.org.cn/CSTR:20146.14.2024.04.01>.

Sharing, Improvement, and Enhancement, which was recorded in Medium and Long-term Science and Technology Development Plan, 2006–2015 of the National State Council as the national strategy of the scientific e-platform construction<sup>[2]</sup>. In October 2013, the Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR-CAS) successfully register in DOI system for DOI: 10.3974<sup>[3]</sup>, the preparation for the infrastructural development of the Global Change Research Data Publishing & Repository was ready.

## 2 Building the Data Publishing Infrastructure Through Two Peer-reviewed Journals Plus E-platform (2014–2020)

June 2014, the Global Change Research Data Publishing & Repository (GCdataPR for short) online including datasets, data papers and metadata<sup>1</sup>, 20 peer reviewed datasets were online published and compatible 20 data papers in both Chinese and English were published in the *Acta Geographica Sinica*<sup>[4]</sup>.

August 2014, the CODATA task group team on research data sharing of developing countries lead by Liu, Chuang, Paul F. Uhler and Gu, Xingfa hosted an International Workshop of Open Data for Science and Sustainability in Developing Countries, the Data Sharing Principles in Developing Countries (The Nairobi Data Sharing Principles for short) was released at the workshop<sup>[5]</sup>.

December 2015, the Editorial Boards of *Acta Geographica Sinica* and GCdataPR jointly announced recommendations that the articles published in the *Acta Geographica Sinica* were welcomed to be publish the related datasets at the GCdataPR.

March 2016, Lead by He, Shujin and Liu, Chuang, 35 Journal officers joined the datasets publishing together with scientific articles.

October 2016, GCdataPR was approved to be the Regular Member of World Data System, International Science Council.

March 2017, the *Journal of Global Change Data & Discovery* was formally launched in both Chinese and English registering CN 10-1493/P and ISSN 2096-3645, which was credited as A New Milestone of China Scientific Data Sharing (Xu, Guanhua, former Minister of Ministration of Science and Technology of China, 2017)<sup>[6,7]</sup>, and creative action by Zhou, Dejin, Director General of Department of Scientific Communication, Chinese Academy of Sciences and supported by the Communication Fund of the CAS for two years (2017–2018).

September 2017, the Guidelines of GCdataPR was released, which includes 14 chapters and 75 articles related to the term, policy, procedure and regulations about the global change research data publishing, repository and sharing<sup>[8]</sup>.

March 2018, the “Scientific Data Management Policy” was released by the State Council of the People’s Republic of China<sup>[9]</sup>, the article 22 of the policy indicates that the competent authorities and legal entities should actively promote the publication and dissemination of scientific data, and support researchers in organizing and publishing scientific data with clear, accurate, complete, and shared value.

March 2018, the GCdataPR was awarded the WSIS Prize (*e-Sciece* Champion, 2018)<sup>[10]</sup>.

July 2018, the GCdataPR was awarded the Innovative Project at the 8<sup>th</sup> Digital Publisher Expo of China<sup>[11]</sup>.

August 2018, Proposed by Liu, Chuang, the Big Data Working Committee of Geographical Society of China was established in Xi’an<sup>[12]</sup>, Professor Liao, Xiaohan was selected as Director and Professors Zhu, Yunqiang, Chen, Lijun were selected as the Deputy Director, Liu, Chuang as Secretary General, all of them are the board members of the

<sup>1</sup> GCdataPR. <http://www.geodoi.ac.cn>.

GCdataPR.

August 2019, the GCdataPR was recognized to be one of the datasets repositories of AGU (American Geophysical Union)<sup>[13]</sup>.

February 2020, for against COVID-19, the GCdataPR cooperated with CCIT (Consultative Committee on Information Technology) of the United Nations and CCLH (Committee on Life Sciences and Human Health) to construct the Data and Information Hub on COVID-19. Professor Gong, Ke, President of WFEO and Chair of CCIT led the project.

June 2020, the peer reviewed *Digital Journal of Global Change Data Repository* was launched registering CN 11-9377/P, ISSN 2096-868X, which is the first digital journal in the world focused on publishing peer reviewed digital datasets<sup>[14]</sup>.

May 2021, the Data and Information Hub on COVID-19 at the GCdataPR was awarded the WSIS Prize (*e-Science*, Champion, 2021)<sup>[15]</sup>.

### 3 Data Driving Innovation for SDGs (2021–2024)

September 2021, the Geographical Indications Environment and Sustainability (GIES) 2021–2030 Program was launched at the CIFTIS (China International Fair for Trade in Services)<sup>[16–19]</sup>, it indicated that the data driving innovative action in geographical indications came to the practices and could benefit society enhancing implementation SDGs.

October 2021, China Association for Science and Technology (CAST) approved to establish the Innovation China GIES Technology Service Team, Liu, Yanhua, Former Vice Minister of Ministry of Science and Technology of China, is the Chair of Steering Committee, Wang, Zhenbo is the Chair of Planning Group, Liao, Xiaohan is the Chair of Expert Group and Liu, Chuang is the Chief Principle Investigator and Chair of Working Group.

January 2022, the first GIES New Year Fair was held. 10 GIES cases together with their GIES products from 8 provinces of China were demonstrated at the festival, including from Ningxia<sup>[20,21]</sup>, Yunnan<sup>[22,23]</sup>, Jilin<sup>[24–31]</sup>, Jiangsu<sup>[32,33]</sup>, Shaanxi<sup>[34,35]</sup>, Guangdong<sup>[36,37]</sup>, Shandong<sup>[38,39]</sup>, Shanxi<sup>[40,41]</sup>.

January 2022, the GIES team cooperated with Panshi of Jilin Province of China launched the first Winter Fishing Festival, Professor Ge, Quansheng, Editor-in-Chief and Director General of IGSNRR-CAS provided the Chinese calligraphy inscriptions.

May 2022, Liu, Chuang delivered a speech on Integrating geographical indication intellectual property with information and communication technology to enhance local sustainable development at the High-Level Policy Forum of the WSIS Closing Ceremony of the United Nations.

July 2022, GIES cases joined the First EU-China Geographical Indications Expo in Luzhou, Sichuan Province of China.

December 2022, Liu, Chuang and Philippe De Maeyer jointed the first Around Table of EU-China Geographical Indications Agreement in Brussels, Belgium, and proposed to set up S&T group between EU and China.

July 2023, FAO OCOP Initiative in Asia and Pacific Region was launched in Dakar, Bangladesh. Liu, Chuang was appointed to be the Vice Chair of FAO OCOP Organizing Group in Asia and Pacific Region.

August 2023, International Conference on Green Development was held in Huzhou, China. IGSNRR-CAS and FAO jointly organizing a workshop on GIES supporting OCOP at the conference. The case study and the capacity building were held in Fengxian County, Jiangsu Province and Beijing separately, experts and OCOP officers from Bhutan, Nepal, Bangladesh, Papua New Guinea, Thailand, Australia, Germany jointed the action.

October 2023, the Committee on Data of International Science Council (ISC) approved to establish GIES Task Group, Liu, Chuang, Kadambot H. M. Siddique and Philippe De

Maeyer appointed to be the co-chair of the task. Three of them are GCdataPR Editorial Board members<sup>[42]</sup>.

February 2024, Liu, Chuang delivered a speech on GIES methodology and technology supporting FAO OCOP at the 37<sup>th</sup> FAO Summit in Asia and Pacific Region.

February 2024, FAO and IGSNRR-CAS jointly signed the Memorandum of Understanding on GIES cooperation at the 37<sup>th</sup> FAO Summit in Asia and Pacific Region in Colombo, Sri Lanka. Professor Wang, Shengling, Deputy Director General of IGSNRR-CAS and Dr. Jong-Jin Kim, Assistant Director General of FAO on behalf of each sides signed the MOU<sup>[43,44]</sup>.

May 2024, the IGSNRR-CAS team visited Denmark, Belgium and Department of Agriculture of EU in Brussels, a common interesting on GIES cooperation was made<sup>[45]</sup>.

May 2024, the FAO OCOP Bhutan “Quinoa” project started. Liu, Chuang and Song, Xianfang were invited to made the GIES application technology transfer and capacity building in Trashigang Dzongkhag.

July 2024, the Geographical Indications Center of IGSNRR-CAS was established, which is the first GI center in the geography of the world. Song, Xianfang was appointed as director, Wang, Zhenbo was Deputy Director and Liu, Chuang was the Chief Scientist of the center<sup>[46,47]</sup>.

September 2024, the GCdataPR won the Prize of Geographical Data Collection and Sharing led by Zhu, Yunqiang and Shi, Ruixiang and Prize of Bid Data Driving GIES led by Liu, Chuang and Song, Xianfang, by Geographical Society of China.

September 2024, FAO and IGSNRR-CAS jointly hosted International Capacity Building Workshop on GIES supporting OCOP Implementation in Beijing, Shiyan City of Hubei Province, Panshi City of Jilin Province, Changzhi City of Shanxi Province. More than 30 experts and FAO OCOP national representatives from more than 20 countries attended the event.

October 2024, GIES coffee case of Panama was started. Liu, Chuang and Song, Xianfang were invited to made the GIES application technology transfer and capacity building in Panama.

December 2024, GIES progress was demonstrated at the 19th IGF (Internet Governance Forum) in Riyadh, Kingdom of Saudi Arabia, As Panel, Liu, Chuang delivered a speech on GIES as new ICT technology enhancing SDGs.

#### **4 Launch the Encyclopedia of the Geographical Data of the World**

After 9 years preparation (since 2015)<sup>[48]</sup>, Liu, Chuang announced that the Encyclopedia of Geographical Data of the World was formally launched by the GCdataPR at the Conference of Geography of the World which was held in Shanghai, China. More than 500 items of the geographical data of the world already published by the GCdataPR.

#### **5 Explore an Innovative Evaluation Method for Datasets Publishing and Repository**

June 2018, Liu, Chuang proposed an innovative evaluation method for datasets publishing and repository, which was called the Data Impact Score (DIS)<sup>[49–53]</sup>, the DIS for datasets, authors, author’s affiliation, founding projects, etc., were calculated according to the new method.

## 6 A Professional Team in Research Data Publishing and Repository was Established

The GCdataPR editorial team was developed from 2 professional scientists to 7+N including dataset editors, data paper editors, metadata network editors, e-science information platform editors, and application guidelines consultants. Now, the GCdataPR has become one of the data publishing training bason, data application communication bason and new technology practices for education. Liu, Chuang, member of the team, was awarded the 2020 Professional and Scholarly Excellence (PROSE) Finalist Award, PROSE Subject Category Winner Award for Environmental Sciences. Shi, Ruixiang and Ma, Junhua were credited as the Outstanding Editor, Li, Guoqing, Associate Chief Editor of GCdataPR, was honored the GEO Individual Excellence Award 2021<sup>[54]</sup>.

## 7 Foundations for Data Publishing and Repository for the Next Decade

More than 1,300 datasets were published by GCdataPR. There were four 100% performances, they are: (1) all of datasets published by GCdataPR were full and open to all both in Chinese and in English; (2) all of these datasets published by GCdataPR were peer reviewed and quality controlled; (3) all of these datasets published by GCdataPR were long-term archived, preserved and protected; (4) all feedback from more than 140,000 IP users, 30 million visitors from more than 100 countries were positive. More than 20 workshops, capacity building events and 43 big data communications in universities and villages<sup>[55]</sup> were held during the last decade. Published research data cooperated with more than 60 academic journals<sup>[56]</sup>. 22 GIES cases from 12 provinces of China, 4 innovative culture festivals and CAS GIES New Year Fair<sup>[57]</sup> were advertised. Two coordinating data application and calculation centers were established in Fengxian County of Jiangsu Province and Zhangzi County of Shanxi Province of China.

### *Commemoration*

I deeply miss Dr. Wang, Zhengxing, the outstanding GCdataPR reviewer, who passed away at a young age. I remember him for his indelible contributions to the data publishing and repository and for his pioneering work in compiling entries for the Encyclopedia of Geographical Data of the World!

### *Acknowledgment*

I express my deep gratitude to IGSNRR-CAS, Geographical Society of China, China Association on Science and Technology, who provided great help and grants to support the GCdataPR. Many thanks to the international organizations, communities, as well as the editorial board members, experts, who provided knowledge and cooperation, which made the GCdataPR success in each steps of the progresses during the last decade! I do appreciate great numbers of data users who had provided most valuable comments and suggestions and congratulations to them for their successful applications!

## References

- [1] Liu, C., Wang, Z. X. Data openness brings national revitalization [N]. Science Times. [https://www.cas.cn/xw/zjsd/200202/t20020206\\_1683490.shtml](https://www.cas.cn/xw/zjsd/200202/t20020206_1683490.shtml).
- [2] National State Council. Medium and Long-term Science and Technology Development Plan (2006–2015) [OL]. Ministry of Science and Technology of the People's Republic of China. [https://www.most.gov.cn/xxgk/xinxifenlei/fdzdgnr/gjkjgh/200811/t20081129\\_65774.html](https://www.most.gov.cn/xxgk/xinxifenlei/fdzdgnr/gjkjgh/200811/t20081129_65774.html).

- [3] Chinese DOI [OL]. <http://www.chinadoi.cn/portal/index.htm>.
- [4] Liu, C. Global change research data publishing and repository [J]. *Acta Geographica Sinica*, 2014, 69(S1):1–3.
- [5] CODATA-PASTD. Data sharing principles in developing countries (The Nairobi data sharing principles) [J]. *Journal of Global Change Data & Discovery*, 2017, 1(1): 12–15. <https://doi.org/10.3974/geodp.2017.01.03>.
- [6] Ge, Q. S. Inaugural Editorial [J]. *Journal of Global Change Data & Discovery*, 2017, 1(1): 1–2. <https://doi.org/10.3974/geodp.2017.01.01>.
- [7] Xu, G. H. New milestone of scientific data sharing of China—speech at the first national conference on global change research data publishing & sharing [J]. *Journal of Global Change Data & Discovery*, 2018, 2(1): 7–8. <https://doi.org/10.3974/geodp.2018.01.02>.
- [8] Editorial office of Journal of Global Change Data & Discovery. Guidelines of global change research data publishing & repository [J]. *Journal of Global Change Data & Discovery*, 2017, 1(3): 253–261. <https://doi.org/10.3974/geodp.2017.03.01>.
- [9] General Office of the State Council. Notice of the General Office of the State Council on issuing the measures for the management of scientific data (Guo Ban Fa [2018] No. 17) [OL]. [https://www.gov.cn/zhengce/zhengceku/2018-04/02/content\\_5279272.htm](https://www.gov.cn/zhengce/zhengceku/2018-04/02/content_5279272.htm).
- [10] Editorial office of Journal of Global Change Data & Discovery. WSIS Prize 2018 (*e-Science* Champion) to the GCdataPR project [J]. *Journal of Global Change Data & Discovery*, 2018, 2(1): 1–6. <https://doi.org/10.3974/geodp.2018.01.01>.
- [11] Department of S&T Information Infrastructure, IGSNRR-CAS. Innovative Project of Digital Publishing Honors to the GCdataPR [J]. *Journal of Global Change Data & Discovery*, 2018, 2(3): 352–353. <https://doi.org/10.3974/geodp.2018.03.17>.
- [12] Geographical Society of China. The Big Geographical Data Working Committee of Geographical Society of China (GSC\_BigData) established [J]. *Journal of Global Change Data & Discovery*, 2018, 2(3): 354–356. <https://doi.org/10.3974/geodp.2018.03.18>.
- [13] Ma, J. H., Duan, Z. Q., Liu, C. GCdataPR identified as the trusted repository by American Geophysical Union to deposit the original data from research paper [J]. *Journal of Global Change Data & Discovery*, 2019, 3(3): 305–307. <https://doi.org/10.3974/geodp.2019.03.13>.
- [14] Liu, C. Inaugural editorial of the Digital Journal of Global Change Data Repository [J]. *Journal of Global Change Data & Discovery*, 2020, 4(2): 101–109. <https://doi.org/10.3974/geodp.2020.02.01>.
- [15] Ma, J., Yi, H. Y., Wang, H., *et al.* 2021 WSIS Prize (*e-Science*, Champion) to project on COVID-19 data and knowledge hub [J]. *Journal of Global Change Data & Discovery*, 2021, 5(3): 356–357. <https://doi.org/10.3974/geodp.2021.03.14>. <https://cstr.escience.org.cn/CSTR:20146.99.2021.03.14>.
- [16] Liu, C., Yu, X. H., Sun, Y. W., *et al.* Summary report of the 1st symposium on GI environment and sustainability [J]. *Journal of Global Change Data & Discovery*, 2021, 5(1): 108. <https://doi.org/10.3974/geodp.2021.01.14>.
- [17] Liu, Y. H. Action on quality geographical products for environment and sustainability—keynote speech at GIES Forum of CIFTIS 2021 [J]. *Journal of Global Change Data & Discovery*, 2021, 5(3): 227–229. <https://doi.org/10.3974/geodp.2021.03.01>. <https://cstr.escience.org.cn/CSTR:20146.99.2021.03.01>.
- [18] Liu, C., Gong, K., Liu, Y. H., *et al.* An innovative solution on geographical indications for environment & sustainability (GIES) [J]. *Journal of Global Change Data & Discovery*, 2021, 5(3): 237–248. <https://doi.org/10.3974/geodp.2021.03.03>. <https://cstr.escience.org.cn/CSTR:20146.14.2021.03.03>.
- [19] He, C. C. Promoting food system transformation for SDGs [J]. *Journal of Global Change Data & Discovery*, 2021, 5(3): 230–236. <https://doi.org/10.3974/geodp.2021.03.02>. <https://cstr.escience.org.cn/CSTR:20146.99.2021.03.02>.
- [20] Zhang, M. X., Sun, Y. W., Li, B., *et al.* GIES case dataset on Yanchi Tan sheep arid grassland in Huamachi Township, Ningxia Hui Autonomous Region, China [J]. *Journal of Global Change Data & Discovery*, 2021, 5(3): 249–260. <https://doi.org/10.3974/geodp.2021.03.04>. <https://cstr.escience.org.cn/CSTR:20146.14.2021.03.04>.
- [21] Zhang, M. X., Sun, Y. W., Li, B., *et al.* Yanchi Tan sheep Huamachi Town arid grassland case dataset on ecosystem protection and sustainable development [J/DB/OL]. *Digital Journal of Global Change Data Repository*, 2021. <https://doi.org/10.3974/geodb.2021.05.09.V1>.
- [22] Duan, R. T., Liu, Y. T., Fu, C. L., *et al.* GIES case dataset on Baoshan Arabica coffee dry-hot valley in Xinzhai Village, Yunnan Province of China [J]. *Journal of Global Change Data & Discovery*, 2021, 5(3): 261–274. <https://doi.org/10.3974/geodp.2021.03.05>. <https://cstr.escience.org.cn/CSTR:20146.14.2021.03.05>.
- [23] Duan, R. T., Liu, Y. T., Fu, C. L., *et al.* Baoshan coffee Xinzhai Village dry-hot valley case dataset on

- ecosystem protection and sustainable development [J/DB/OL]. *Digital Journal of Global Change Data Repository*, 2021. <https://doi.org/10.3974/geodb.2021.05.10.V1>.
- [24] Fu, J. Y., Du, X. L., Zheng, Q. S., *et al.* GIES case dataset on rice permanent farmland in Lanjia Village, Jilin Province of China [J]. *Journal of Global Change Data & Discovery*, 2021, 5(3): 275–289. <https://doi.org/10.3974/geodp.2021.03.06>. <https://cstr.escience.org.cn/CSTR:20146.14.2021.03.06>.
- [25] Fu, J. Y., Du, X. L., Zheng, Q. S., *et al.* Panshi rice Lanjia Village case dataset on permanent basic farmland protection and sustainable development [J/DB/OL]. *Digital Journal of Global Change Data Repository*, 2021. <https://doi.org/10.3974/geodb.2021.06.01.V1>.
- [26] Chen, S. B., Ye, Y. H., Fu, J. Y., *et al.* GIES case study on Chinese cherry apple in low mountains and hills Baoshan Town, Panshi City, Jilin Province of China [J]. *Journal of Global Change Data & Discovery*, 2021, 5(4): 373–384. <https://doi.org/10.3974/geodp.2021.04.02>. <https://cstr.escience.org.cn/CSTR:20146.14.2021.04.02>.
- [27] Chen, S. B., Ye, Y. H., Fu, J. Y., *et al.* Panshi Chinese cherry apple Baoshan low mountains and hills case dataset on ecosystem protection and sustainable development [J/DB/OL]. *Digital Journal of Global Change Data Repository*, 2021. <https://doi.org/10.3974/geodb.2021.12.41.V1>.
- [28] Liu, C., Guo, X. Y., Liu, Y. H., *et al.* GIES case dataset on summer angling and winter fishing in Panshi Qiantang (Thousands Reservoirs), Jilin Province of China [J]. *Journal of Global Change Data & Discovery*, 2021, 5(4): 385–398. <https://doi.org/10.3974/geodp.2021.04.03>. <https://cstr.escience.org.cn/CSTR:20146.14.2021.04.03>.
- [29] Liu, C., Guo, X. Y., Liu, Y. H., *et al.* Panshi Qiantang (Thousands Reservoirs) fishing life case dataset of ecosystem protection and sustainable development [J/DB/OL]. *Digital Journal of Global Change Data Repository*, 2021. <https://doi.org/10.3974/geodb.2021.12.42.V1>.
- [30] Dai, J. H., Yang, J., Zhou, Y., *et al.* GIES case dataset on Panshi large corylus low mountain and hills in Futai Town, Jinlin Province of China [J]. *Journal of Global Change Data & Discovery*, 2021, 5(4): 431–443. <https://doi.org/10.3974/geodp.2021.04.07>. <https://cstr.escience.org.cn/CSTR:20146.14.2021.04.07>.
- [31] Dai, J. H., Yang, J., Zhou, Y., *et al.* The Panshi large corylus Futai low mountain and hills case dataset of ecosystem protection and sustainable development [J/DB/OL]. *Digital Journal of Global Change Data Repository*, 2021. <https://doi.org/10.3974/geodb.2021.12.46.V1>.
- [32] Yao, F. T., Su, N., Gu, H. Y., *et al.* GIES case study on Feng County burdock of the ancient Yellow River floodplain [J]. *Journal of Global Change Data & Discovery*, 2023, 7(2): 115–128. <https://doi.org/10.3974/geodp.2023.02.01>. <https://cstr.escience.org.cn/CSTR:20146.14.2023.02.01>.
- [33] Yao, F. T., Su, N., Gu, H. Y., *et al.* Fengxian burdock (*Arctium lappa*) ancient Yellow River flooding area case dataset on habitat protection and sustainable development [J/DB/OL]. *Digital Journal of Global Change Data Repository*, 2021. <https://doi.org/10.3974/geodb.2021.06.06.V1>.
- [34] Wang, Y. S., Yang, Y. Y., Liu, Y. S., *et al.* GIES case dataset on Yangxian black rice crested ibis (*Nipponia nippon*) habitat in Caoba Village, Shaanxi Province of China [J]. *Journal of Global Change Data & Discovery*, 2021, 5(3): 290–299. <https://doi.org/10.3974/geodp.2021.03.07>. <https://cstr.escience.org.cn/CSTR:20146.14.2021.03.07>.
- [35] Wang, Y. S., Yang, Y. Y., Du, L. M., *et al.* Dataset of GI environment protection and sustainable development of black rice and Crested Ibis (*Nipponia nippon*) habitat in Caoba Village, Yang County, Shaanxi Province of China [J/DB/OL]. *Digital Journal of Global Change Data Repository*, 2021. <https://doi.org/10.3974/geodb.2021.08.06.V1>.
- [36] Wang, J. N., Luo, Y. Y., Tan, Z. X., *et al.* GIES case dataset on Conghua litchi in subtropical hills in Jiangpu Town, Guangdong Province of China [J]. *Journal of Global Change Data & Discovery*, 2021, 5(4): 399–409. <https://doi.org/10.3974/geodp.2021.04.04>. <https://cstr.escience.org.cn/CSTR:20146.14.2021.04.04>.
- [37] Wang, J. N., Luo, Y. Y., Tan, Z. X., *et al.* Conghua litchi Jiangpu Street subtropical low hills case dataset on ecosystem protection and sustainable development [J/DB/OL]. *Digital Journal of Global Change Data Repository*, 2021. <https://doi.org/10.3974/geodb.2021.12.43.V1>.
- [38] Wang, Z. B., Li, K. X., Huang, Y. H., *et al.* GIES case dataset on Yucheng wheat-grain double cropping Yellow River irrigation farmland in Fangsi Town, Shandong Province of China [J]. *Journal of Global Change Data & Discovery*, 2021, 5(4): 410–419. <https://doi.org/10.3974/geodp.2021.04.05>. <https://cstr.escience.org.cn/CSTR:20146.14.2021.04.05>.
- [39] Wang, Z. B., Li, K. X., Huang, Y. H., *et al.* Wheat-maize double cropping field in Yellow River irrigation

- Fangsi Town case dataset on environment protection and sustainable development [J/DB/OL]. *Digital Journal of Global Change Data Repository*, 2021. <https://doi.org/10.3974/geodb.2021.12.44.V1>.
- [40] Zhang, A. Y., Hao, Z. F., Zhang, J. J., *et al.* GIES case dataset on Zezhou millet (Danchuan millet) red clay in Gaodu Town, Shanxi Province of China [J]. *Journal of Global Change Data & Discovery*, 2021, 5(4): 420–430. <https://doi.org/10.3974/geodp.2021.04.06>. <https://cstr.escience.org.cn/CSTR:20146.14.2021.04.06>.
- [41] Zhang, A. Y., Hao, Z. F., Zhang, J. J., *et al.* Zezhou millet (Danchuan millet) Gaodu red clay case dataset on ecosystem protection and sustainable development [J/DB/OL]. *Digital Journal of Global Change Data Repository*, 2021. <https://doi.org/10.3974/geodb.2021.12.45.V1>.
- [42] Editorial Office of Journal of Global Change Data & Discovery. CODATA Task Group on GIES established [J]. *Journal of Global Change Data & Discovery*, 2023, 7(4): 433–434. <https://doi.org/10.3974/geodp.2023.04.13>. <https://cstr.escience.org.cn/CSTR:20146.99.2023.04.13>.
- [43] Li, X., Liu, C. MoU between FAO and IGSNRR-CAS on GIES supporting OCOP [J]. *Journal of Global Change Data & Discovery*, 2024, 8(3): 223–229. <https://doi.org/10.3974/geodp.2024.03.01>. <https://cstr.escience.org.cn/CSTR:20146.99.2024.03.01>.
- [44] Wang, S. L. A new milestone of high-level cooperation between FAO and IGSNRR-CAS [J]. *Journal of Global Change Data & Discovery*, 2024, 8(3): 230–231. <https://doi.org/10.3974/geodp.2024.03.02>. <https://cstr.escience.org.cn/CSTR:20146.99.2024.03.02>.
- [45] Song, X. F. A consensus among EU and China on GIES and education [J]. *Journal of Global Change Data & Discovery*, 2024, 8(3): 333–337. <https://doi.org/10.3974/geodp.2024.03.12>. <https://cstr.escience.org.cn/CSTR:20146.99.2024.03.12>.
- [46] Wang, Z. B. A new research center on geographical indications established [J]. *Journal of Global Change Data & Discovery*, 2024, 8(3): 324–330. <https://doi.org/10.3974/geodp.2024.03.10>. <https://cstr.escience.org.cn/CSTR:20146.99.2024.03.10>.
- [47] Liu, Y. H. Congratulations on establishment of the Geographical Indication Research Center [J]. *Journal of Global Change Data & Discovery*, 2024, 8(3): 331–332. <https://doi.org/10.3974/geodp.2024.03.11>. <https://cstr.escience.org.cn/CSTR:20146.99.2024.03.11>.
- [48] Wang, Z. X. Boundary data of Loess Plateau Region [J/DB/OL]. *Digital Journal of Global Change Data Repository*, 2015. <https://doi.org/10.3974/geodb.2015.01.09.V1>.
- [49] Liu, C. Data Impact Score (DIS) —a quantitative method of data performance to the data-driven sciences [J]. *Journal of Global Change Data & Discovery*, 2018, 2(2): 135–143. <https://doi.org/10.3974/geodp.2018.02.02>.
- [50] Shi, R. X., Liu, C., Ma, J. H., *et al.* Statistics and analysis of Global Change Research Data Publishing & Sharing (2014–2017) [J]. *Journal of Global Change Data & Discovery*, 2017, 1(4): 383–390. <https://doi.org/10.3974/geodp.2017.04.01>.
- [51] Liu, C., Ma, J. H., Uhlir, P. F., *et al.* Challenge and solution for research data citation [J]. *Journal of Global Change Data & Discovery*, 2018, 2(2): 123–134. <https://doi.org/10.3974/geodp.2018.02.01>.
- [52] Geographical Society of China. Global change research data publishing & sharing rankings [J]. *Journal of Global Change Data & Discovery*, 2018, 2(3): 243–248. <https://doi.org/10.3974/geodp.2018.03.01>.
- [53] Liu, C., Liao, X. H., Zhang, G. Y., *et al.* Analysis to the highest impact dataset 2018 from the Geographical Society of China [J]. *Journal of Global Change Data & Discovery*, 2018, 2(3): 249–255. <https://doi.org/10.3974/geodp.2018.03.02>.
- [54] Editorial office of Journal of Global Change Data & Discovery. Prof. Li, Guoqing was honored the GEO Individual Excellence Award 2021 [J]. *Journal of Global Change Data & Discovery*, 2021, 5(4): 512. <https://doi.org/10.3974/geodp.2021.04.16>. <https://cstr.escience.org.cn/CSTR:20146.99.2021.04.16>.
- [55] Wu, J. J., Liu, C., Liu, B. Y. Launch meeting of capacity building in 100 universities program on Global Change Research Data Publishing & Sharing [J]. *Journal of Global Change data & Discovery*, 2017, 1(3): 371–374. <https://doi.org/10.3974/geodp.2017.03.21>.
- [56] Ma, J. H., He, S. J., Liu, C. A common interesting on coordination of global change research data repository and academic journals [J]. *Journal of Global Change Data & Discovery*, 2018, 2(4): 473–476. <https://doi.org/10.3974/geodp.2018.04.19>.
- [57] Zhu, Y. Q., Liu, C., Wang, Z. B., *et al.* Data driven multi-stakeholders' cooperation for SDGs—summary report on events of the 1st GIES New Year Fair and the launching of ANSO action [J]. *Journal of Global Change Data & Discovery*, 2022, 6(1): 149–152. <https://doi.org/10.3974/geodp.2022.01.20>. <https://cstr.escience.org.cn/CSTR:20146.23.2022.01.20>.