

Guidelines of Global Change Research Data Publishing & Repository

Editorial Office of Journal of Global Change Data & Discovery

Chapter I General Provisions

Article 1: The Guidelines of Global Change Research Data Publishing & Repository is suitable for all of the stakeholders of the Global Change Research Data Publishing & Repository (DOI: 10.3974/) and the *Journal of Global Change Data & Discovery* (ISSN 2096-3645, CN 10-1493/P) to carry out the relevant governance activities.

Article 2: Global change research data refers to the scientific research activities in the application and records of the sustainable environment, especially in geography, environment, natural resources, ecology and the humanities, at the various scales, including global, regional, national, and local spatial scales, as well as different time periods, such as from geological, historical, to near real-time.

Article 3: Global change research data publishing refers to the publishing of metadata, data products and data paper publishing in a coordinated way. The metadata and the data products are published at the Global Change Data Publishing & Repository (GCdataPR), while the data papers are published at the *Journal of Global Change Data & Discovery*.

Article 4: Global change research data sharing refers to the data that are peer reviewed and registered with DOIs, and that are openly accessible and sustainable to all, including providing the data (metadata, data products, and data papers) browsing, searches, and download services through the internet.

Article 5: The governance of global change research data publishing and sharing refers to the activities in coordinating the stakeholders on the data and adopting a series of management rules. The GCdataPR stakeholders include the data authors (first author, corresponding author, and co-authors), affiliations and funding agencies for supporting the data development, the peer review team, data publishing editorial board and editorial office, data publishing organization, data archiving and repository institution, data sharing service providers, and data users. Through the GCdataPR publishing and sharing governance, the data property can be protected, data security can be controlled in time, data quality should be made reliable, the data can be queried, the data papers and the related research papers can be linked, the data can be archived over the life time preservation, the data can be re-used as scientific resources, and the data authors' contributions can be credited.

Article 6: The Global Change Research Data Publishing & Repository (GCdataPR) is

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sponsored by the Institute of Geographic Sciences and Natural Resources Research, the Chinese Academy of Sciences and the Geographical Society of China, and under the auspices of the Chinese Academy of Sciences. The GCdataPR has been online since June 2014 at <http://www.geodoi.ac.cn>. The web site series number is JING ICP 05002838-34 and the data publishing registration services number is DOI: 10.3974.

Article 7: The *Journal of Global Change Data & Discovery* has published since March 2017. The GCdataPR is sponsored by the Institute of Geographic Sciences and Natural Resources Research, the Chinese Academy of Sciences and the Geographical Society of China, and under the auspices of the Chinese Academy of Sciences. The journal series number is CN 10-1493/P, ISSN 2096-3645.

Article 8: The GCdataPR serves CODATA PASTD as the data publishing and sharing infrastructure for developing countries since August 2014. It was appointed as the China GEO Data Publishing Center by the National Remote Sensing Center of Ministry of Science and Technology of China (NRSCC/MOST), and the GEOSS Data Provider and Broker by GEOSS in June 2016. It has been on the list of the Clarivate Analytics Data Citation Index of Web of Science in August 2016, a Regular Member of World Data System of the International Council of Sciences (WDS/ICSU) since October 2016, and involved in the Working Group of Information System and Services, Committee of Earth Observation Systems (WGISS/ CEOS) since November 2017.

Article 9: In order to fulfill the responsibilities and obligations listed above and to ensure the GCdataPR data publishing and sharing sustainably and efficiently, the Editorial Office of *Journal of Global Change Data & Discovery* issued the Guidelines of Global Change Research Data Publishing & Repository.

Article 10: These Guidelines include the following aspects: (1) submission (2) peer review (3) data archiving and repository (4) data publishing and updating (5) data networking (6) data sharing services (7) data citation (8) cost sharing (9) capacity building (10) annual report, meetings, and outreaches, and (11) reward and punishment.

Chapter II Submission

Article 11: Anyone, who is submitting data for publishing at the GCdataPR, needs to register at <http://www.geodoi.ac.cn> before the submission. Any registered author is required to log in first, enter the author area, and then go to the submission section.

Article 12: Anyone, who would like to submit data and a manuscript for publishing at GCdataPR and the *Journal of Global Change Data & Discovery*, should submit metadata, the data product(s) and data paper together. Since both GCdataPR and the *Journal of Global Change Data & Discovery* are bilingual platforms in both English and Chinese, the Editorial Office will work with the author to complete the bilingual results in both English and Chinese.

Article 13: Submitting metadata: Metadata is the data that explains or documents the dataset, and the ISO TC191 is the GCdataPR metadata standard. Adequate metadata are required to accompany each dataset so that users can understand the data once they access it. Anyone who submits metadata, should fill out the online metadata form in the submission section of the web site at www.geodoi.ac.cn. There are two major functions of the GCdataPR metadata, they are: (1) to query, search and retrieve the dataset in the GCdataPR system; and (2) networking to DOI, GEOSS Portal, DCI, WDS, China GEOSS systems, and other relevant entities.

Article 14: Submitting a dataset or data product: Submitting a dataset or data product is the other key part of the data submission. The following issues should be noticed by every submitter: (1) Data Format: The GCdataPR encourages each of the submitters to submit the dataset or data product using the normal data format or international standard data format (see Article 28). However, a different, specific data format may be accepted, subject to compatible computer software; (2) Data Files: If the dataset or data product consist of a series of data files, compressed data package(s) is (are) necessary for uploading; (3) Data Size: The dataset can be submitted to the online submission section at <http://www.geodoi.ac.cn/>, if the data file size is less than 20 MB. If the data size is bigger than 20 MB, a sample of the dataset should be submitted first, and after the preliminary review by the editorial office, the full dataset can be submitted to the FTP server.

Article 15: Data Paper: A data paper is a special style of article about the data, including the full description of the dataset, a demonstration how the dataset is innovative, and its reliability. The *Journal of Global Change Data & Discovery* Editorial Office provides the data paper framework and the format requested.

Article 16: Author Commitment: The dataset author(s) should have the following commitment: (1) the data, including metadata, data product and data paper are original; (2) the data, including metadata, data product and data paper do not contain any unlawful, scandalous, libelous, obscene, or otherwise objectionable information; (3) ensure the data, including metadata, data product and data paper are real, and do not have any false data (either a part or the whole, including the data generating process); and (4) the dataset author(s) agrees not to grant any other DOI publisher the exclusive right to publish the dataset and data paper, either before or after their publication in the GCdataPR.

Article 17: Data Intellectual Property Management: The dataset author(s) agrees to give the following licenses to the Editorial Office of *Journal of Global Change Data & Discovery*, which was approved as the publisher by the State Administration of Press Publication, Radio, Film and Television of the Peoples' Republic of China, the Chinese Academy of Sciences, the Institute of Geographic Science and Natural Resources Research of the Chinese Academy of Sciences, and the Geographical Society of China: (1) publish the metadata in either or both printed format or digital format in any media, including on the internet; (2) publish the dataset(s) in digital format in any media, including the internet; (3) coordinate with the Journal(s) to publish the data paper in either or both printed format or digital format in any media, including the internet; (4) host and transfer the delivery right and service right; and (5) maintain online or mirror sites, which include the metadata, data product, and paper.

Article 18: The Author(s) Information: the author(s) information, including that of the principal author, corresponding author, and co-author should include: a ResearcherID or ORCID or other electronic scientific research personnel ID Numbers, affiliation information, funding agency, and project coding number.

Article 19: Author's Responsibility: The author(s), including principal author, corresponding author, and co-authors are solely responsible for the content of the metadata, data product, and data paper.

Article 20: Web Site: All activities for the submissions for the data publishing are requested to be made through the online platform at: <http://www.geodoi.ac.cn/>.

Chapter III Peer Review

Article 21: Flowchart: the peer review process is key for enhancing the quality of all submissions. The Editorial Office of *Journal of Global Change Data & Discovery* provides a standard flowchart for peer review of the data, including metadata, data product, and data paper.

Article 22: Peer Reviewers: the peer reviewers are well-known experts in the field of global change and scientific data studies. Normally, there are 3–5 peer reviewers for each submission, including metadata, data product, and data paper.

Article 23: Review Content: the content of the data review includes: (1) check the author(s)' information and all details of the metadata; (2) review and evaluate each of the data files, including spatial, temporal, and bandwidth resolutions, error and cited data records, records citation, data maps, data format, data size references and other pertinent characteristics; and (3) review the data paper, including Chinese and English versions. It is requested that the DOI, and the order of the data maps, tables, pages and references are the same in each language, although the languages are different.

Article 24: Feedback to the Author(s) for Editing: The feedback from peer reviewers will be returned to the author(s) for modifying, editing, or changing the originally submitted materials. The feedback information should point out the data mistakes and errors, provide the guidance for finding the possible causes of data error, and suggestions for the data modification. The Editorial Office normally does not limit the time for modification, because of the complexities in data editing. However, the accepted time is subject to the final version submitted by the author.

Article 25: Rejection: The Editorial Office may decide to reject a submission in any one of the following situations: (1) Immediately reject the dataset, in which more than 10% of the total records have been copied from another dataset, or are false (the data record, data analysis process and data results, or equipment related to the data, are fraudulent); (2) Reject the data, including metadata, data product, and data paper and article because they are irrelevant to global change studies; (3) Reject the data that is not suitable for public availability because they infringe on privacy, or contain unlawful, scandalous, libelous, obscene, or otherwise objectionable information; (4) Reject the data, because the quality did not reach the level for publishing, although the dataset has gone three times to the reviewers for feedback; or (5) The First of First Principle: If there are two same or similar data products, the one submitted second will be rejected.

Article 26: The Third Part Examination and Approval: If it is needed in some cases, a third examination and approval by the authority shall be carried out.

Article 27: Approval of Publishing: The Editor-in-Chief or the Executive Associate Chief Editor of the Global Change Research Data Publishing & Repository and of the Journal of Global Change Data & Discovery shall make the decision for approving all the publications and long-term preservation, as well as open access services.

Chapter IV Data Archiving and Repository

Article 28: Data archiving and long-term preservation are the basis and fundamental to data sharing. Without permanent data preservation, there will be no permanent data sharing guarantee. Data archiving and preservation include digital data (including data products and the journal) and the print version of the journal. The IGSNRR/CAS library, including

the regular library and the digital library are the repository and will take the responsibility for the data and journal archiving and long-term preservation.

Article 29: Data Format: Data format is the basic element of data archiving and preservation. The international common data formats are encouraged to be used for the GCdataPR. A special data format is allowed, subject to compatibility with the publishing computer program. The GCdataPR recommended data formats include .doc, .docx, .pdf, .xml, .xlsx, .dat, .dbf, .shp, .kml, .kmz, .tif, .img, .hdf, .mdd, .jpg, .tif, .zip, .rar and .vob, etc.

Article 30: Data Files: Data files of a data product will be organized in any of two ways: (1) according to the international cartographical standard or projection to frame the data (spatial maps) into a series of sheets or tiles, and then package them into a data file package; or (2) geographic coordination based (no projection given) on data file package. In order to transfer and deliver the data packages, all of data files may be compressed, and a single compressed file size must less than 800 MB.

Chapter V Data Publishing and Updating

Article 31: Data Registration with DOI: All of the data, metadata, data products, and data papers should be registered though DOI: 10.3974.

Article 32: DOI for GCdataPR: All of the data, metadata, data products, and data papers should be registered though DOI: 10.3974 separately, while the metadata and data products published at the Global Change Research Data Publishing & Repository should be registered at DOI: 10.3974/geodb, and the data paper from the Journal of Global Change Data & Discovery should be registered at DOI: 10.3974/geodp.

Article 33: The metadata and data products published at the Global Change Research Data Publishing & Repository should be registered in both Chinese and English.

Article 34: The data papers and articles published at the Journal of Global Change Data & Discovery should be registered in both Chinese and English.

Article 35: The Journal of Global Change Data & Discovery will be published in both Chinese and English and in both print and online digital versions.

Article 36: The print edition of *Journal of Global Change Data & Discovery*, in both the Chinese and English versions, will keep the same style in the following respects: (1) the content of the article is same; (2) the number of authors, the authors' order, the authors' affiliations, and the authors' contributions are same; (3) the DOI registration number is same; (4) the maps and tables are same; (5) the reference number and order are same; and (6) the pages and page numbers are same.

Article 37: The online digital version of the *Journal of Global Change Data & Discovery*, in both the Chinese and English versions, will be published in .pdf and .xml formats, and there will be a single web page for each article. The Chinese version and English version should be directly linked and easily inter-linked by a language icon on the web page.

Article 38: Modify Data: In certain cases, the data is allowed to be modified after the dataset has been published. The modified data should go to the "data modify" procedure. The data product modified will keep the same dataset title, author(s) and DOI, and add the modified date into the dataset annotation.

Article 39: Updated Data: Data can be updated after the dataset has been published. The updated data should be done according to the "data update" procedure. The updated data product will keep the same dataset title, author(s) and DOI, and add the update date into the dataset annotation.

Article 40: New Dataset in a Time Series Data Product: For updates of those datasets in a time series, if there is a change in the author(s), or even if the author(s)' roles have changed (e.g., the order of authors), the updated dataset will be considered for publication as a new data product, instead of as an updated dataset.

Chapter VI Data Networking

Article 41: Data Networking: Data networking includes dataset intellectual property networking, data search and retrieval networking, data related academic discovery paper networking, data author networking, data application networking, and the like. All of these networks of networks will be coordinated through the metadata and international standards on the internet.

Article 42: Network to DOI: The data registration for identifying the intellectual property operated by the networking between the GCdataPR and the DOI system will be done according to the standard metadata of both.

Article 43: Network to DCI and GEOSS: The data product networking operated between the GCdataPR and the Data Citation Index (DCI) of the Web of Science, the GEOSS Portal and China's GEOSS Systems will be done based on their standard metadata and related information.

Article 44: Network to SCI and CNKI: The networking operated between the online Journal of Global Change Data & Discovery and the Science Citation Index of the Web of Science and the China National Knowledge Infrastructure (CNKI) will be based on their standard metadata and related information.

Article 45: GCdataPR Partners: The Editorial Office of the Journal of Global Change Data & Discovery establishes the Journal Partner program, by which the GCdataPR plays the repository role for the data from the journal partners and provides services related to the journal partners.

Article 46: Data Authors' Networking: All of the data authors will use the ResearcherID of the Web of Science or the ORCID system.

Article 47: The Role of GCdataPR's Networks: The Editorial Office of *Journal of Global Change Data & Discovery* encourages data publication and sharing through all of its networks, taking in the data easily and continuously to be used worldwide.

Chapter VII Data Sharing Services

Article 48: Data Sharing Services: The Editorial Office of *Journal of Global Change Data & Discovery* provides the data sharing online services, including the services for both data authors and data users.

Article 49: Data Users: The GCdataPR data users include data browsers, end users, value-added service providers, and users for data combination.

Article 50: Data Sharing Policy: Data include metadata, datasets or data products, and data papers. Data sharing policy includes the following provisions: (1) Data are openly available and can be freely downloaded via the internet for everyone; (2) end users are welcome to use data subject to data citation protocols; (3) users, who are by definition also value-added service providers, are welcome to redistribute data subject to written permission from the Editorial Office of *Journal of Global Change Data & Discovery* and the issuance of a data redistribution license, and; (4) if data are used in new datasets, the 'ten per cent principle' should be followed, meaning that the data records utilized should not surpass

10% of the new dataset contents, while sources should be clearly cited and given appropriate attribution in suitable places in the new dataset.

Article 51: Entrustment: If needed, the Editorial Office of *Journal of Global Change Data & Discovery* may entrust or contract the data distribution activities to another quality organization, subject to agreement.

Article 52: Services for the Authors: The Editorial Office of *Journal of Global Change Data & Discovery* provides services for the data authors, including the online and offline statistics of browsers, downloads, citations, annual ranking, and perhaps other factors. In order to prevent malicious downloading, only once to can be calculated if multiple downloading within 24 hours, if an IP downloads the same data files more than 5 times within the 24 hours, the IP will be blocked during the following 24 hours.

Article 53: The Real-Time Result of Statistics: The statistics at the the GCdataPR portal will be provided in real time, including the number of datasets published, the online compressed data size, the total number of authors, the authors' affiliations, and the countries of authors; as well as the total number of visitors, IP users, countries downloading the data, citations, the size of the data files downloaded, and perhaps other statistics.

Chapter VIII Data Citation

Article 54: Citation: The data products published at the Global Change Research Data Publishing & Repository should provide the dataset citation form in the metadata; the data papers or articles published at the Journal of Global Change Data & Discovery should provide the citation form in a suitable place in the article.

Article 55: According to the Data Sharing Policy (Article 50), no more than 10% of the records in other published dataset are allowed. However, for any allowed uses it is necessary to cite in an appropriate and clear place of the new dataset to indicate the origin of the data records that have been used from the GCdataPR. Quotes of not more than 100 words are also allowed from an article published in the Journal of Global Change Data & Discovery, but it is necessary to cite any such quotes directly.

Article 56: All users, including dataset or data product users and the data paper users, should follow the data sharing policy and the data and article citation principles. It is required that all users, including dataset users and article uses, should cite both the dataset and the related data paper.

Chapter IX Cost Sharing

Article 57: Global change research data publishing, repository and sharing has costs, including long-term preservation and the related scientific infrastructure. Multiple stakeholders are involved in these actions. In fact, no one can do it individually. Therefore, co-operation among the stakeholders provides the solution, especially in/for/with economically developing countries, including the cost and responsibilities of sharing.

Article 58: Financial Support from the Sponsors: the IGSNRR/CAS and GSC, as the sponsors, will cover the costs of the Editorial Office staff, network transmissions, communications, the data repository facilities, and related equipment.

Article 59: Financial Support for Publications: the authors can publish metadata and datasets (data products) at the GCdataPR without payment and data papers in the Journal of Global Change Data & Discovery for a fee according to the IGSNRR's charge requests.

Independent author(s) from the least economically developed countries, young scientist, under 35 years of age, from developing countries and senior person, over 65 years of age from all countries publish their data (metadata, datasets and articles) without payment.

Article 60: Funding Agencies: The Editorial Office of *Journal of Global Change Data & Discovery* may get grants from funding agencies, public or private sectors, through the IGSNRR/CAS and GSC.

Article 61: User Costs: Excepted all end users and value added provider services with written permission for free, users may pay for the following products: (1) the print version of the *Journal of Global Change Data & Discovery*; (2) users who are value added provider services may pay for the dissemination of the digital version of *Journal of Global Change Data & Discovery*; and (3) users who are value added provider services may pay for the dissemination of the datasets published at GCdataPR.

Article 62: The Editorial Office of *Journal of Global Change Data & Discovery* will take the responsibility for implementing the cost sharing activities.

Chapter X Capacity Building

Article 63: Capacity Building: Since the global change research data publishing and sharing is an innovative action, capacity building is particularly important. The capacity building includes two parts: (1) capacity building of the editorial teams of the GCdataPR and the *Journal of Global Change Data & Discovery*, as well as for the Editorial Offices for both; and (2) capacity building for the potential authors.

Article 64: Editorial Board of the GCdataPR: The Editorial Board of the GCdataPR is an international team consisting of well-known scholars, including the Editor-in-Chief, Associate Chief Editors, and Editors. The main responsibilities of this Editorial Board are to review the GCdataPR strategy, implementation plan, annual report, as well as the datasets that will be published.

Article 65: Editorial Board of *Journal of Global Change Data & Discovery*: The Editorial Board of *Journal of Global Change Data & Discovery* is an international team consisted of well-known scholars, including the Editor-in-Chief, Associate Chief Editors, and Editors. The main responsibilities of this Editorial Board are to review the *Journal of Global Change Data & Discovery* strategy, implementation plan, annual report, as well as the data papers and articles.

Article 66: Editorial Office of *Journal of Global Change Data & Discovery*: The Editorial Office of *Journal of Global Change Data & Discovery* is the operational team for the daily work of both the GCdataPR and the *Journal of Global Change Data & Discovery*. Members of the Editorial Office have to be members of the Geographical Society of China.

Article 67: Capacity Building of the Editorial Office of *Journal of Global Change Data & Discovery*: The Editorial Office team of *Journal of Global Change Data & Discovery* should pay attention to the strategic plans and guidance of CODATA, WDS/ICSU, GEO, China GEO, as well as other relevant national and international strategic plans, enhancing the coordinating ability among the stakeholders of the GCdataPR, and updating the technical capabilities with new technology, as appropriate.

Chapter XI Annual Report, Conference, and Outreach

Article 68: Annual Report: The Editorial Office of the *Journal of Global Change Data & Discovery* takes the responsibility for completing the annual report of the GCdataPR and

the Journal of Global Change Data & Discovery, which will be published and formally delivered to the sponsors, partners, as well as the public every year.

Article 69: Annual Conference: The Editorial Office of *Journal of Global Change Data & Discovery* will organize a conference or workshop based on the issues of global change research data publishing, repository and sharing. The annual data use rankings and credit the outstanding data contributors will be published at the annual conference.

Article 70: Outreach: The Editorial Office team of *Journal of Global Change Data & Discovery* should participate regularly in the academic activities of CODATA, WDS, GEO, WGISS, IGU, RDA, and other relevant organizations.

Chapter XII Reward and Punishment

Article 71: Data Contribution Ranking: The Editorial Office of *Journal of Global Change Data & Discovery* will work with the Geographic Society of China to publish the data contribution rankings, including the best institution ranking, best funding ranking, best journal (related to the data publication) ranking, best browsed dataset ranking, best downloaded dataset ranking, and best cited dataset ranking. Other rankings may be given, as appropriate.

Article 72: Award: The sponsor organizations, IGSNRR/CAS and Geographic Society of China, will award the outstanding contributors, including authors, Editorial Board members, and reviewers on a yearly basis.

Article 73: Punishment: Any authors, including the principal, corresponding, or co-authors, who publish datasets at the GCdataPR, and data papers or articles at the Journal of Global Change Data & Discovery, and who have made any verified forgery or plagiarism in their dataset or data paper or article, that dataset or data paper or article will be withdrawn from the GCdataPR and the Journal. The withdrawal notice will be published at the official website GCdataPR. All the withdrawn authors, including the principal author, corresponding author, and co-authors will not be invited to participate any activities that the Editorial Office of Global Change Data & Discovery organizes over a two-year period, and no manuscripts and data for publishing will be accepted during those two years.

Chapter XIII Research on New Challenges

Article 74: Research on New Challenges: Since the global change research data publishing, repository, and sharing is a new direction in the global sciences, the needs for the Future Earth program and the Sustainable Development Goals (SDGs) of the United Nations, as well as the advances of new data technology, such challenges should be carefully considered and integrated in these activities. The Editorial Office and the Editorial Board of the GCdataPR and the *Journal of Global Change Data & Discovery* will keep track of such major developments and link them to their daily work, including appropriate research on solutions for the challenges posed by the major global change programs.

Chapter XIV Amendment of the Guidelines

Article 75: Amendments: The Editorial Office of *Journal of Global Change Data & Discovery* will make any amendments of these Guidelines of Global Change Research Data Publishing & Sharing based on requirements from the multi-stakeholders and strive to adopt new solutions for new challenges.