

# Summary of the Capacity Building in 100 Universities Program on Global Change Research Data Publishing & Sharing (2017)

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The Global change research data publishing and sharing received a series of feedbacks since the Global Change Research Data Publishing & Repository online in June 2014 and the *Journal of Global Change Data & Discovery* published since March 2017. The feedbacks are diverse, including issues related to the strategies, policies, technologies, cases and capacities, etc., such as why we need the data publishing, how to publish my data, what the relationship between the dataset publishing and the data paper publishing as well as the discovery paper publishing, how to evaluate my data is qualified to be published, how to protect the knowledge intellectual right and how to cite my dataset published and so on. In order to response to the requirements from students, data scientist, professors and even publishers and journalists, the Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR/CAS) and the Geographical Society of China initialed the Capacity Building in 100 Universities Program on Global Change Research Data Publishing & Sharing started in June 2017. The activities of the phase of 2017 were focused on the issues: (1) why the global change research data publishing and sharing (2) key technologies for the data publishing and sharing (3) cases analysis for understand how to publishing, sharing and re-using global change data and (4) the local content and progress on research data. The program was supported by the Communication Bureau of Chinese Academy of Sciences. Total 9 universities and institutes hosted the activities, including 5 in Beijing and 1 in Antananarivo of Madagascar, Jinan of Shandong Province, Xining of Qinghai Province and Yinchuan of Ningxia Hui Autonomous Region. More than 930 researchers and students joined the program, including more than 30 persons from Madagascar and more than 20 persons from South Africa, Kenya, Tanzania, Mongolia, Nepal, Ukraine and Indonesia. The activities were led by the Principle Investigator Group of Communication for Geography of the World. The summary items of each of the activities are listed at the Table 1 to Table 9.

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**Table 1** The 1<sup>st</sup> Meeting at Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (Beijing)

Items	The 1 <sup>st</sup> Meeting
Theme	The 2017 national conference of Global Change Research Data Publishing & Sharing
Date	29 June 2017
Location	Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR/CAS) (Beijing)
Organizers	IGSNRR/CAS and Geographical Society of China
Host	IGSNRR/CAS
Supporter.	Communication Bureau of Chinese Academy of Sciences
Conveners	<ul style="list-style-type: none"> <li>• Liu, Chuang. Professor of IGSNRR/CAS, Principle Investigator of Communication of Geography of the World and Editor-in-Chief of Global Change Research Data Publishing &amp; Repository</li> <li>• Zhang, Guoyou. Vice President of Executive Secretary General of the Geographical Society of China</li> <li>• Song, Xianfang. Director of Academic Journal Center of Institute of IGSNRR/CAS</li> </ul>
Panels	<ul style="list-style-type: none"> <li>• Xu, Guanhua. Former Minister of Ministry of Science and Technology of China, and Academician of Chinese Academy of Sciences</li> <li>• Zheng, Do. Professor of IGSNRR/CAS and Academician of Chinese Academy of Sciences</li> <li>• Lu, Dadao. Professor of IGSNRR/CAS, and Academician of Chinese Academy of Sciences</li> <li>• Zhang, Songmei. Chief Engineer and Deputy Director General of National Remote Sensing Center of China, Ministry of Science and Technology of China</li> <li>• Yang, Zixiu. Project Manager of Communication Bureau of Chinese Academy of Sciences</li> <li>• Chen, Jun. Chief Engineering of the National Geoinformatic Center of China</li> <li>• Ge, Quansheng. Director General and Professor of IGSNRR/CAS and Editor-in-Chief of <i>Journal of Global Change Data &amp; Discovery</i></li> </ul>
Participates	More than 150 professors and scientists participate the conference, they are from Beijing, Shanghai, Tianjin, Xian, Guangzhou, Dalian, Nanjing, Zhengzhou, <i>et al.</i>
Report	Summary report by Professors Jiang, D., Song, X. F. and Zhang, G. Y. was published at the <i>Journal of Global Change Data &amp; Discovery</i> , 2017, Vol.1 No.2

**Table 2** The 2<sup>nd</sup> Meeting at the University Of Antananarivo, Madagascar (Antananarivo)

Items	The 2 <sup>nd</sup> Meeting
Theme	International training workshop on open and reuse scientific data in developing countries, Madagascar, 2017
Date	September 7–8, 2017
Location	University of Antananarivo, Madagascar (Antananarivo city, Madagascar)
Organizers	Committee on Data for Science and Technology (CODATA) Task Group on Preservation of and Open Access to S&T Data in/for/with Developing Countries (PASTD) Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences
Host	University Of Antananarivo, Madagascar
Conveners	<ul style="list-style-type: none"> <li>• Tao, Zui. Assistant Professor of Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences</li> <li>• Nicolas Raft Razafindrakoto, Professor of University Of Antananarivo, Madagascar</li> </ul>
Panels	<ul style="list-style-type: none"> <li>• Zhou, Xiang. Professor and Director of Major Research Program, Institute of Remote Sensing and Digital Earth, Co-Chair of CODATA Task Group on PASTD and Associate Chief Editor of Global Change Research Data Publishing &amp; Repository</li> <li>• Mika Odido, Co-chair of Capacity Building subgroup of CODATA - PASTD and IOC Sub Commission for Africa and the Adjacent Island States, UNESCO Multi-Sectoral Office in Nairobi, Kenya</li> </ul>

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Items	The 2 <sup>nd</sup> Meeting
Panels	<ul style="list-style-type: none"><li>• Ambinintsoa Lucie Noasilalaonomenjahary, Ministry of Environment, Ecology and Forests, Madagascar</li><li>• Simon Hodson, Executive Director of Committee on Data for Science and Technology</li></ul>
Participates	More than 30 teachers, graduated students and researchers from 6 universities of Madagascar jointed the event
Report	Summary report was published by Zhou, Xiang., Tao, Zui, Nicolas Raft Razafindrakoto and Mika Odido at the <i>Journal of Global Change Data &amp; Discovery</i> , 2017, Vol. 1 No.2

**Table 3** The 3<sup>rd</sup> Meeting at Beijing Normal University (Beijing)

Items	The 3 <sup>rd</sup> Meeting
Theme	Geographic science development driven by big data
Date	September 13, 2017
Location	Faculty of Geographic Sciences of Beijing Normal University (Beijing)
Organizers	Geographical Society of China, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences
Host	Faculty of Geographic Sciences of Beijing Normal University
Supporter	Communication Bureau of Chinese Academy of Sciences
Convener	<ul style="list-style-type: none"><li>• Wu, Jianjun. Associate Dean and Professor of Faculty of Geographic Sciences of Beijing Normal University</li></ul>
Panels	<ul style="list-style-type: none"><li>• Song, Changqing. Executive Dean and Professor of Faculty of Geographic Sciences of Beijing Normal University</li><li>• Liu, Baoyuan. Vice President of Geographical Society of China</li><li>• He, Shujin. Executive Director of Academic Journal Center of IGSNRR/CAS</li></ul>
Presentations	<ul style="list-style-type: none"><li>• Liu, Chuang. Professor of IGSNRR/CAS, Principle Investigator of Communication of Geography of the World and Editor-in-Chief of Global Change Research Data Publishing &amp; Repository Title of Presentation: The Role of Global Change Research Data Publishing and Sharing for Geography in the Big Data Era</li><li>• Liu, Ronggao. Professor and Director of Breach of Natural Resources and Environmental Data of IGSNRR/CAS Title of Presentation: New technology for big data processing</li><li>• Chen, Lijun. Senior Engineer of National Geoinformatics of China, Associate Chief Editor of Global Change Research Data Publishing &amp; Repository Title of Presentation: The GlobeLand 30 dataset development and sharing</li><li>• Cheng, Changxiu. Professor and Director of Data Analysis Center of Faculty of Geographic Sciences of Beijing Normal University Title of Presentation: Progress of Data Analysis Center of Faculty of Geographic Sciences of Beijing Normal University</li></ul>
Participates	More than 60 professors and graduate students jointed the event
Report	The summary report was published at <i>Journal of Global Change Data &amp; Discovery</i> , 2017, Vol. 1 No. 2

**Table 4** The 4<sup>th</sup> Meeting at Qinghai Normal University (Xining City)

Items	The 4 <sup>th</sup> Meeting
Theme	Geographic science development driven by big data
Date	October 13, 2017
Organizers	Geographical Society of China IGSNRR/CAS

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Items	The 4 <sup>th</sup> Meeting
Host:	School of Geographic Sciences, Qinghai Normal University
Supporter:	Communication Bureau of Chinese Academy of Sciences
Convener	Liu, Fenggui. Professor and Dean of School of Geographic Sciences, Qinghai Normal University
Panels	Fu, Bojie. President of Geographical Society of China, Academician of Chinese Academy of Sciences Zhang, Guoyou. Vice President and Executive Secretary General of Geographical Society of China Ma, Deming. Vice President of Qinghai Normal University
Presentations:	<ul style="list-style-type: none"><li>• Jiang, Dong. Professor of IGSNRR/CAS Associate Chief Editor of <i>Journal of Global Change Data &amp; Discovery</i> Title of Presentation: Practices on Global Change Research Data Sharing</li><li>• Liu, Chuang. Professor of IGSNRR/CAS Principle Investigator of Communication of Geography of the World and Editor-in-Chief of Global Change Research Data Publishing &amp; Repository Title of Presentation: Data Quality - the Key of Data Publishing</li><li>• Xu, Xinliang. Professor and Deputy Director of Natural Resources and Environmental Data Center of IGSNRR/CAS and Associate Chief Editor of Global Change Research Data Publishing &amp; Repository Title of Presentation: Land Use and Land Cover Data of China</li><li>• Chen, Qiong. Associate Professor and Deputy Director of Department of Geoinformatics of School of Geographic Sciences of Qinghai Normal University Title of Presentation: Progress of Geographical Data Management of Qinghai Normal University</li></ul>
Participates	More than 200 students and teachers from Qinghai Normal University jointed the event

**Table 5** The 5<sup>th</sup> Meeting at Science Press (Beijing)

Items	The 5 <sup>th</sup> Meeting
Theme	Big data from academic journals
Date	October 16, 2017
	Location: Science Press (Beijing)
Organizers	Geographical Society of China, IGSNRR/CAS
Host	Science Press
Supporter	Communication Bureau of Chinese Academy of Sciences
Convener	He, Wenwen. Director of Department of Communication and Academic Journals, Science Press
Presentations	<ul style="list-style-type: none"><li>• Liu, Chuang. Professor of IGSNRR/CAS Principle Investigator of Communication of Geography of the World and Editor-in-Chief of Global Change Research Data Publishing &amp; Repository Title of Presentation: Re-thinking the Strategy of National Platform of China for Open Access to Academic Journals and related Research Data</li><li>• He, Shujin. Executive Director of Academic Journal Center of IGSNRR/CAS Title of Presentation: Progress of Academic Journals Integration in IGSNRR, CAS</li><li>• Wang, Qunying, Liu, Chunfeng. The Cases Presentation from Journal of Natural Resources and Journal of Progress of Geography</li></ul>
Participates	More than 50 journal editors from Chinese Academy of Sciences jointed the meeting and there were more than 80 remote participates

**Table 6** The 6<sup>th</sup> Meeting at Institute of Remote Sensing and Digital Erath, Chinese Academy of Sciences (Beijing)

Items	The 6 <sup>th</sup> Meeting
Theme	Innovative applications of remote sensing in the big data era
Date	October 19, 2017
Location	Institute of Remote Sensing and Digital Erath, Chinese Academy of Sciences (Beijing)
Organizers	Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences Environmental Remote Sensing Committee of Geographical Society of China Editorial Office of Journal of Remote Sensing
Host	Institute of Remote Sensing and Digital Erath, Chinese Academy of Sciences
Supporter	Communication Bureau of Chinese Academy of Sciences
Convener	Zhou, Xiang. Professor and Director of Major Research Program, Institute of Remote Sensing and Digital Earth, Co-Chair of CODATA Task Group on PASTD and Associate Chief Editor of Global Change Research Data Publishing & Repository
Presentations	• Gu, Xingfa. Executive Deputy Director of Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences and Editor-in-Chief of Journal of Remote Sensing Title of Presentation: Spectrum Earth: A New Opportunities of Big Remote Sensing Data Applications • Liu, Chuang. Professor of IGSNRR/CAS, Principle Investigator of Communication of Geography of the World and Editor-in-Chief of Global Change Research Data Publishing & Repository Title of Presentation: Methodology for Data Encyclopedia Items on Geography of the World • Chen, Lijun. Senior Engineer of National Geoinformatics of China, Associate Chief Editor of Global Change Research Data Publishing & Repository Title of Presentation: The GlobeLand 30 Dataset Development and Sharing
Participates	More than 50 scientist and graduated students from Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences joined the event

**Table 7** The 7<sup>th</sup> Meeting at IGSNRR/CAS

Items	The 7 <sup>th</sup> Meeting
Theme	Data publishing and sharing in developing countries
Date	October 20, 2017
Location	IGSNRR/CAS (Beijing)
Organizer	International Cooperation Bureau of Chinese Academy of Sciences
Host	IGSNRR/CAS
Supporter	Communication Bureau of Chinese Academy of Sciences Geographical Society of China CODATA Task Group of Preservation of and Open Access to S&T Data in/for/with Developing Countries (PASTD)
Convener	Zhu, Yunqiang. Professor and Director of Earth Data Sharing Breach of Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Associate Chief Editor of Global Change Research Data Publishing & Repository
presentations	• Liu, Chuang. Professor of IGSNRR/CAS, Principle Investigator of Communication of Geography of the World and Editor-in-Chief of Global Change Research Data Publishing & Repository Title of Presentation: Guidelines of Implementation of Data Sharing Principles in Developing Countries • Shi, Ruixiang. Assistant Professor of IGSNRR/CAS and Associate Chief Editor of Global Change Research Data Publishing & Repository Title of Presentation: Procedure of Global Change Research Data Publishing and Sharing • Muliaro Wafula, Professor and Director of Data Center of Jemo Kenyaya Agriculture and Technology of Kenya Title of Presentation: Development of Data Center in Jemo Kenyaya Agriculture and Technology of Kenya
Participates	More than 20 participates joined the event, they came from South Africa, Kenya, Tanzania, Mongolia, Nepal, Ukraine and Indonesia

**Table 8** The 8<sup>th</sup> Meeting at School of Resources and Environment of Ningxia University

Items	The 8 <sup>th</sup> Meeting
Theme	Big data application for Yellow River geography
Date	November 13, 2017
Location	School of Natural Resources and Environment of Ningxia University (Yinchuan City)
Organizers	Geographical Society of China Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences Ningxia Association for Science and Technology Geographical Society of Ningxia
Host	School of Natural Resources and Environment, School of Environmental Engineering of Ningxia University
Supporter	Communication Bureau of Chinese Academy of Sciences
Convener	Zhang, Mingxin. Professor of School of Natural Resources and Environment of Ningxia University
Panels	Zhang, Guoyou. Vice President and Executive Secretary General of Geographical Society of China Wang, Jianyu. Associate Dean and Associate Professor of School of Natural Resources and Environment of Ningxia University Zhong, Yanxia. Deputy Director of Department of Science and Technology of Ningxia University
Presentations	<ul style="list-style-type: none"> <li>• Zhou, Shangyi. Deputy Secretary General of Geographical Society of China and Professor of Beijing Normal University Title of Presentation: Big Data and the Three Dimensional Content: Data Application in Human Geography</li> <li>• Liu, Chuang. Professor of IGSNRR/CAS Principle Investigator of Communication of Geography of the World and Editor-in-Chief of Global Change Research Data Publishing &amp; Repository Title of Presentation: Guidelines of Global Change Research Data Publishing &amp; Sharing</li> <li>• Wang, Wenrui. Associate Professor of School of Natural Resources and Environment, Lanzhou University Title of Presentation: A Case Study—Methodology of the Dataset Development for Tourism Activities' Impact to the Vegetation in the Sangke Prairie (2013)</li> <li>• Zhong, Yanxia. Deputy Director of Department of Science and Technology of Ningxia University Title of Presentation: Progress of Big Geographical Data in Mingxia University</li> </ul>
Participates	More than 200 students and professors joined the event
Report	The summary report was published at: <a href="http://env.nxu.edu.cn/info/1088/3000.htm">http://env.nxu.edu.cn/info/1088/3000.htm</a>

**Table 9** The 9<sup>th</sup> Meeting at Shangdong Normal University (Jinan City)

Items	The 9 <sup>th</sup> Meeting
Theme	Innovative education and research in integrating geography, environment and ecosystems driven by big data
Date	December 6, 2017
Location	Changqing Lake Compass of School of Geography and Environment, Shandong Normal University (Jinan City)
Organizers	Geographical Society of China, IGSNRR/CAS
Host	School of Geography and Environment, Shandong Normal University
Supporter	Communication Bureau of Chinese Academy of Sciences

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Items	The 9 <sup>th</sup> Meeting
Convener	Xing, Hanfa. Associate Professor and Director of Big Geographical Data Development and Research Center, School of Geography and Environment, Shandong Normal University
Panels	<ul style="list-style-type: none"><li>• Wu, Quanyuan. Professor and Director of Department of Geography, Shandong Normal University</li><li>• Wang, Xincheng. Professor and Dean of School of Geography and Environment, Shandong Normal University</li></ul>
Presentations	<ul style="list-style-type: none"><li>• Liu, Chuang. Professor of IGSNRR/CAS Principle Investigator of Communication of Geography of the World and Editor-in-Chief of Global Change Research Data Publishing &amp; Repository Title of Presentation: Global Change Research Data Publishing and Sharing</li><li>• Zhou, Xiang. Professor and Director of Major Research Program, Institute of Remote Sensing and Digital Earth, Co-Chair of CODATA Task Group on PASTD and Associate Chief Editor of Global Change Research Data Publishing &amp; Repository Title of Presentation: Methodology and Application of Spectrum Earth</li><li>• Xu, Xinliang. Professor and Deputy Director of Natural Resources and Environmental Data Center of Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences and Associate Chief Editor of Global Change Research Data Publishing &amp; Repository Title of Presentation: Introduction to the Time Series of Land Ecosystem Classification Dataset of China in Five-Year Increments</li><li>• Xing, Hanfa. Associate Professor and Director of Big Geographical Data Development and Research Center, School of Geography and Environment, Shandong Normal University Title of Presentation: Progress of Big Data Development and Application in Shandong Normal University</li></ul>
Participates	Around a hundred of students and professors joined event
Report	The summary report of the meeting was published at: <a href="http://www.pre.sdnu.edu.cn/info/1024/2697.htm">http://www.pre.sdnu.edu.cn/info/1024/2697.htm</a>