Reporting Template for IGF Workshop Sessions

Session title:	Big Data and the Environment: a pathway to achieving SDGs
Date:	December 8
Time:	10:45-12:15
Workshop Organiser:	China Association for Science and Technology (CAST) Committee on Data for Science and Technology (CODATA)
Chairperson/Moderator:	Xiang Zhou/Chuang Liu
Rapporteur/Note Taker:	Jing Ma
List of Speakers and their institutional affiliations:	1. Ricardo Israel Robles Pelayo, Universidad Humanitas, Mexico 2. Xiang Zhou, Task group on Science and Technology Data in Developing Countries, CODATA/Institute of Remote Sensing and Digital Earth, CAS 3. Mikhail Komarov, Higher School of Economics, National Research University, Russia 4. Chuang Liu, China Association for Science and Technology/ Institute of Geographical Sciences and Natural Resources Research, CAS,China

Key Issues raised (1 sentence per issue):

1.Key Elements of Governance on Big Data for Environment , including legal Framework

2. Cooperation mechanism of multistakeholders on big data for implementing SDGs

3.Best Practices and capacity building on implementing Open Data in Developing Countries

If there are Presentations during the workshop session, please provide a 1-paragraph summary for each Presentation

Prof. Ricardo Israel Robles Pelayo introduced the regulations of intellectual property and the legal issues of big data according to Mexican law. He explained the relations of involved Mexican law and code to the internet, such as privacy law, the code of commerce, and copyright law etc. The research of and response to global environment problem needs the support of big data, so the governance and legal requirements of data access, analysis and use certainly are the crucial, Also, the intellectual property of methodologies and technologies related to environment impact analysis are also important concern. The data policies and legal issues of on Big Data for environment need further studied and formulated with joint efforts from legal profession, scientists and other different communities.

Prof. Zhou, co-chair of CODATA-PASTD task group , gave an introduction of PASTD activities and Practices of Preservation and Access of Research Data in Developing Countries. He also presented the updated objectives, action plan, and expected cooperation with multi-stakeholders in developing and developed countries, which are active response to the “Open Data in a Big Data World” International Accord issued by ICSU, IAP, ISSC and TWAS. In coming years, PASTD activities will pay more attention on open data policies and best practices, and capacity building to support the data sharing of developing countries in achieving SDGs, especially low and middle income countries.

Dr. Mikhail Komarov introduced the initiative supported by the Russian Government on open data. Open data portal have more than 11,000 data available and more than 400 data sets focused on ecology in Russia, including pollution map, some statistics and information about different types of animals in different regions and so on. The solution and effective measures should be further discussed on open data sets for business purposes and building different business models based on environment data. The new services based on big data will provide the decision making of the Government and other communities. The collaboration with different stakeholders actually will benefit the achieving of SDGs.

Prof. Chuang Liu, introduced general status of Publishing and Sharing of Research Data for Sciences and Sustainability in Developing Countries. There is a big jump between the data user and the data holders. Improvement of data publishing needs more cooperation and dedicated work by Doing locally, networking globally. She introduced the practices of Global Change Research Data Publishing & Repository (Land-use, water resources, air quality monitoring etc.) as the demonstrating example of big data to support the studies of environment impact, especially for those developing countries without enough

infrastructure and resources. The data policies, technology solution and information sharing are key elements for implementation of big data in research of sustainable environment.

Please describe the Discussions that took place during the workshop session: (3 paragraphs)

1. The connections between big data and environment

The participants discussed the connections between big data and environment in achieving SDGs. The audience expressed the confusion on the relations of big data to environment. Environment is not a direct goal in new sustainable development agenda 2030. But, the environment-our earth, for the sustainable development goals to be reached, definitely is the fundamental for human society to shift the world on to a sustainable and resilient path. Big data will provide strong support to the research of and response to global environment problem on data resources and technology solution.

2. Global environment and contribution of Local data

The participants had a concern on the contribution of local data to the research and improvement of global environment. Undoubtedly, big data help us to find the hidden information from wide data collecting and data mining. The environment research and improvement needs the deep analysis on data collected at different levels, that means the effective integration of local, regional and global data, and the results will benefit the different stakeholders at different level, both to individuals and to communities.

3. Capacity building

The participants discussed the methodologies to better utilize big data to support the information extraction and decision making process regarding the environment issues. The experiences derived from existing efforts will support countries to accelerate awareness on regional and global environment problems and progress on data science and open data sharing towards SDG targets. The effort will make communities expertise on data policy and best practice available to governments, academic community, private sectors at all stages, providing the support to implementation of sustainable development and governance all over the world, especially in low and middle income countries.

Please describe any Participant suggestions regarding the way forward/ potential next steps /key takeaways: (3 paragraphs)

1. Data Policy and Legal framework for big data implementation

It is important to promote development of strategy and institutional guidelines of big data and data policy for implementation of open data in developing countries, especially in low

and middle income countries (LMIC). The work on Data policy and Legal framework will benefit the improvement of environment problem utilizing big data and very helpful for developing countries to have the good of open data in achieving SDGs.

2 Open data and Services

Internet Governance and open data are two drivers for successful implementation of big data in environment research. The participants suggest to encourage to improve of national infrastructure and data center, to build data bilateral and multilateral data sharing mechanism and to accelerate eService applications.

3. Best practice and capacity building

The implementation and of big data in environment improvement requires the collaboration all of Civil Society, Government, technical communities, individuals. The countries may collect the best practice and the good example of application used in big data on the environmental problem and the communities can share the best practice with the support of Internet, academic journal or training courses, especially Developing Countries. Action plan can be formulated and conducted through regional cooperation under IGF framework.