IGF 2017 Reporting Template

- Session Title: Data in environmental and climate activities

- Date: 20 December 2017

- Time: 09:00-10:00

- Session Organizer: World Meteorological Organization

- Chair/Moderator: Dejan Dincic, DiploFoundation

- List of Speakers and their institutional affiliations:
- Stephan Bojinski, Scientific Officer , Satellite Utilization and Products Division at the WMO Space Programme Office
- Peiliang Shi, Director of the WMO Information System division of the WMO

Session summary:

Also available on the [GIP Digital Watch Obervatory](), written by Michael J. Oghia
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Mr Stephan Bojinski, talked about satellite data in weather, climate, and environmental applications. He stressed how satellites and data recorders are crucial for compiling meteorological data, and gave examples of how data is used to better predict and track storms, climate impacts, and other related natural processes. Satellites specifically support environmental services through earth observation, navigation, telecommunications, and monitoring of the sun, and are directly contributing to improving weather forecasts. Bojinski also highlighted that there have been significant investments by all WMO members into the weather and climate data chain. As an example, he said, "A five-day forecast today is more accurate than a three-day forecast 15 years ago." Bojinski explained how big data gathered by weather and climate-monitoring agencies is used to track phenomena such as sea-level rises and ice sheet melting: in this way Earth observation contributes to achieving the Sustainable Development Goals. He concluded with projections into the future for the technology that tracks how the planet is changing, and future trends for the WMO. These include using higher quality and resolution, including more factors that determine climate and weather patterns, and expanding computational power, since there are significant computing and bandwidth constraints as more data is generated. He also emphasised how energy constraints are limiting computational abilities, since energy use for modelling is so high. Lastly, he underscored how cloud computing will be a key tool in data analysis and modelling in the future.

Mr Peiliang Shi talked about the WMO's information system strategy, which is meant to support the WMO research network. He began by outlining how the WMO leverages internationally coordinated data-gathering networks to conduct their work. A notable point was raised about the synergistic relationship between weather information systems and global telecommunications systems, further emphasising the integrated and holistic nature of the data infrastructure. Shi also stressed that the WMO is proud of the fact that, even before the Internet, they had an effective coordination network; however, the Internet has clearly become an integral component of their research and coordination efforts. He explained how multiple nodes of their research network, such as national and academic research centres, generate extensive amounts of data, including metadata, which is then shared and freely available for analysis. This network is unified by a robust and decentralized data communications network, which is also how they maintain an extensive catalogue of meteorological data. Shi also shared trends regarding the WMO's research network, including common data sharing platforms and technology becoming a prerequisite for effective modelling and research, the increasing use of the web as a data sharing platform, the rise of big data and cloud technology becoming

stable, secure, and cost effective, and search engines becoming a point of entry to meteorological and climate data. Lastly, he addressed the WMO's planned disposal of data.