

Japan's submission regarding its views on the Earth Information Day and organization by the Secretariat of similar events

Japan appreciates the opportunity to submit its views on inviting the Secretariat to organize at future sessions of the SBSTA at which systematic observation is concerned, as appropriate, starting at SBSTA 51 (December 2019), similar events to the Earth Information Day held in 2016 during SBSTA45 (FCCC/SBSTA/2019/2, para. 57 and 58). Recalling our submission in 2018 (as attached), Japan is pleased to submit for consideration at this juncture the below possible topics with relevance to the Convention and the Paris Agreement, in addition to those mentioned in the attached 2018 submission.

Theme 1: Earth observation by satellites

Key findings from Decadal Japanese Satellite Observations for Climate Change

Theme 2: Earth observation data and climate models

Utilization of earth observation data for furthering Earth System Models' validation and sophistication, particularly focusing on the crucial role of the ocean in the global carbon and nitrogen cycle, in Japan's cutting-edge climate model development project, Integrated Research Program for Advancing Climate Models (TOUGOU), in its endeavor to contribute to the Paris Agreement

Additionally, Japan considers that it would be meaningful and beneficial to the Parties if the following information could be provided at the subsequent Earth Information Day events.

✧ **Updates of recent activities of WMO and GCOS**

We welcome additional explanations on “WMO Statement on the State of the Global Climate” and “WMO Greenhouse Gas Bulletin” which the World Meteorological Organization (WMO) has been submitting to SBSTA/COP continuously. While we know that WMO is in the process of reforming their governance, any information about the new governance structure and, especially, new strategies related to the climate change monitoring, will be favorable for the Parties of UNFCCC. Additionally, information on WMO's collaboration projects for climate monitoring with other international organizations, including those of the Group on Earth Observation (GEO), the Intergovernmental Oceanographic Commission (IOC) of UNESCO will also be beneficial.

We would appreciate if the secretariat of the Global Climate Observing System (GCOS) could introduce the position of the GCOS program in the new WMO governance. In addition, sharing the latest status of the GCOS Cooperation Mechanism (GCM), through which GCOS supports the developing countries for their operational climate observation, seems beneficial. We also hope that any inputs from GCOS will contain the below aspects:

- the importance of quality control (QC) in climate change monitoring,
- the activities of GCOS Surface Network Monitoring Centre (GSNMC) for QC, and
- the activities of the Commission for Basic Systems-Lead Centers for GCOS (CBS-LC-GCOS) for QC.

【Attachment (Japan's Submission in 2018)】

Japan appreciates the opportunity to submit its views on inviting the Secretariat to organize future Earth Information Day events during the implementation of the GCOS IP 2016, based on submission from Parties (as per FCCC/SBSTA/2016/4).

First of all, Japan welcomes the Secretariat to hold similar informative events focusing on systematic observation, such as the Earth Information Day held at SBSTA45/COP22. Secondly, regarding the modality, Japan is flexible about the frequency of such in-session events taking place during the fall session of SBSTA/COP from COP25 onwards and considers that the event could be held either annually or every two to four/five years, depending on substantial technical developments in the area of systematic observation, further scientific advancements on the status of the global climate system, or the increase in the specific inputs (submission themes/topics) from Parties. In addition, Japan considers that the duration of such events, for instance, could be half-day, if it is to be held annually, and that it could be full-day, as appropriate, if it is to be held, for example, to coincide with relevant events such as the World Meteorological Organization (WMO) Congress (that is held every four years), or in consideration of the in-country visit reviews and the National Communications under the UNFCCC (which is held every four years). Another option would be to hold the longer (full-day) event to align with the phase of the Global Stocktake (that is scheduled to be held every five years starting from 2023). Furthermore, it could be also beneficial, for instance, to focus on different geographical regions or climate variables at these events.

Furthermore, Japan is pleased to submit at this juncture eight possible topics for consideration regarding the below four themes with relevance to the Convention and the Paris Agreement:

1. Earth observation by satellites
2. Oceanic observation, focusing on ocean acidification
3. Earth observation data platform
4. Earth observation data and climate models

Theme 1: Earth observation by satellites

1-a: Examples and achievements of climate observation using Japanese satellites (GOSAT (Greenhouse gases Observing SATellite) series, GCOM-W (Global Change Observation Mission — Water) and GCOM-C (Global Change Observation Mission - Climate))

1-b: How satellite-based GHG (Greenhouse Gas) observing system can support transparency of GHG estimations (to discuss how satellite-based observation data can support the improvement of a national inventory of human-induced GHG emissions and removals, and discuss related technical as well as capacity-building challenges and their possible solutions).

Theme 2: Oceanic observation, focusing on ocean Acidification

2-a: Research into ocean acidification through activities such as high-quality oceanic observations by R/V *Mirai*, deployment of autonomous observation platforms equipped with multiple sensors, and development of new analytical methods. The on-going engagement in such specific activities (for instance, the measurement of CO₂ concentration, pH and alkalinity in seawater; deployment of Biogeochemical Argo, drifting CO₂ buoys; and development of Microfocus X-ray (MXCT) CT Scan system as well as a hybrid pH sensor) contribute to the Global Ocean Acidification Observing Network (GOA-ON), an international network on ocean acidification.

2-b: R/Vs *Ryofu Maru* and *Keifu Maru* have conducted physical and biogeochemical measurements, including temperature, salinity, dissolved oxygen, nutrients and carbonate system parameters along underway and repeat hydrographic sections in the western North Pacific, and global periodical ocean acidification monitoring information is provided using such observation data.

Theme 3: Earth observation data platform

3-a: Contributions by Data Integration and Analysis System (DIAS), Japan's Earth Environmental Information Platform, for Global Earth Observation System of Systems (GEOSS)

3-b: The World Data Centre for Greenhouse Gases (WDCGG) for the WMO Global Atmosphere Watch (GAW) programme, ensuring good quality of and promoting free and open access to global GHG measurement data.

Theme 4: Earth observation data and climate models

4-a: Utilization of earth observation data for further climate models' validation and sophistication in Japan's climate model development project, Integrated Research Program for Advancing Climate Models (TOUGOU), in support of the Paris Agreement

4-b: Improving estimates of emission and removal of global GHG by using atmospheric composition data in global data archives such as the WDCGG and inverse models in support of the Paris Agreement

Additionally, Japan considers that it would be meaningful and beneficial to the Parties if the following information could be provided on the occasion of subsequent Earth Information Day events.

◇ In-country visit reviews on NC-7

Reports of National Communications (NC) from Annex I countries are submitted once every four years. The in-country visit reviews on NC-7 have been conducted in 2018. As such, the comprehensive reports gathering all the reviews on systematic observation will be very fruitful for Parties in order to understand fully the updated status of the global climate observation system.

✧ **Updates of recent activities of WMO and GCOS**

The WMO will hold the World Meteorological Congress on June 2019. The cycle of the Congress is once every four years, and at the Congress, all of the WMO Members will be encouraged to participate and discuss the status of systematic observations at both in situ and remote sensing platforms. Thus, it would be much appreciated if WMO could share highlights of the World Meteorological Congress as well as some feedbacks from the WMO's Members widely with the participants of future Earth Information Day events. Furthermore, Japan remains hopeful that the Global Climate Observing System (GCOS) might be able to emphasize, in its keynote presentation on global climate observing systems at such future events, the importance of quality control (QC) of observation data in climate change monitoring by referring to the activities of GCOS Surface Network Monitoring Centre (GSNMC) as well as the WMO's Commission for Basic Systems Lead Centres for GCOS (CBS-LC-GCOS) for the improvement of quality and transmission rate.