Submission from Japan:
Views on the Research Dialogue during SBSTA40

Japan welcomes the opportunity to submit its views on the possible topics for consideration as part of the research dialogue during SBSTA40, as requested by the paragraph 5 of the conclusion of agenda item 7 at SBSTA38 (FCCC/SBSTA/2013/L.2).

As stated in the paragraph 4 of the above conclusion, the IPCC will have completed before SBSTA40 contributions from the three Working Groups to its Fifth Assessment Report (AR5), leaving only the Synthesis Report to be finalized in October 2014. We would very much like at this timely Dialogue to learn through IPCC the updated research outcome information including new findings and assessments relevant to the needs of the Convention.

The Dialogue would then be further beneficial for both policy makers and research communities to exchange views on emerging research challenges and policy needs. Japan has been enhancing joint research, capacity building and science-policy dialog through offering support to the Asia-Pacific Network for Global Change Research (APN) and continues these efforts for further enhancing activities. In this context, we also would suggest to also invite the representative of Future Earth, a 10-year research initiative being launched by International Council for Science (ICSU) and others, intending to "develop the knowledge for responding effectively to the risks and opportunities of global environmental change and for supporting transformation towards global sustainability in the coming decades" with several existing international research programmes and organizations, including WCRP, IGBP, IHDP and DIVERSITAS.

As for emerging research challenges we would suggest the following issues to be considered as possible topics, for example:

- Quantifying and decreasing still existing large uncertainty of short-lived climate pollutants (SLCPs) such as black carbon are getting increasingly important for the co-benefit policy standpoint of climate change and air pollution, though recent studies, for example, newly found that the positive radiative forcing of black carbon had been underestimated. Further, SLCPs are inter-connected and anthropogenic aerosols with negative radiative forcing may make the co-benefit

aspect complicated. ＊

- The feedback effect of the carbon cycle on the climate system has been quantitatively studied by the Earth system models (ESMs) including terrestrial ecosystem processes since the Fourth Assessment Report (AR4) of the IPCC in order to further improve the long-term climate change projection. However, recent studies show that the nitrogen related process (or nitrogen cycle) and land use change are also involved in determining the feedback intensity, hence increasing complicity in the whole processes. Since the capacity building of young modeling expert for advancing ESMs seems a common issue in research communities worldwide, it would be valuable to learn views on this issue from policy makers and research communities.＊

- Issues on near-term future projection have been taken up for the first time by the IPCC as an independent chapter in the AR5. This projection is much challenging because it comprises not only the aspect of external force response problem but also that of initial value problem for short-term internal variability, involving substantial extreme events that are increasingly concerned about. Recent research efforts have contributed to AR5 including the possible predictability for several years. However, existing models are still facing various challenges in their simulation of such as the so-called Hiatus.

As some of our research activities are also closely related with the paragraph 3 of the above conclusion on capacity-building activities and the need of detailed climate data and information at local and regional levels, we are ready to respond to present our report as follows. Japan has been providing detailed climate model output data produced by its super-high resolution global atmospheric model (which is driven by the present and future sea surface temperature) to developing countries after inviting experts from these countries to stay Japan for a month each to familiarize them with numerical data analysis method under the World Bank (WB) funds and Japan International Cooperation Agency (JICA) funds. ＊

Japan has also been providing carbon dioxide and methane data obtained by its earth observing satellite, GOSAT, since 2009 and continuously supporting experts in developing countries under GOSAT Research Announcement scheme. In addition to carbon dioxide and methane, carbon monoxide and black carbon data obtained by

GOSAT-2 to be launched in FY2017 will be provided.

Japan is ready and would be happy to make presentation on any of these topics if requested.