6. The GCOS-GOOS-WCRP Ocean Observations Panel for Climate (OOPC) is charged with delivering requirements for the Ocean Component of GCOS (Global Climate Observing System), the physics variables for GOOS (Global Ocean Observing System), and observations for the World Climate Research Programme (WCRP) in addition to scientific advice to the Joint WMO-IOC Commission for Oceanography and Marine Meteorology (JCOMM). Following the adoption of the work plan for 2013–2018[3] as a framework to inform engagement with partners and focusing panel activities around priority system evaluations, OOPC-18 was held on 14–17 April 2015 in Sendai, Japan. Main focus, the GCOS Status Report, Preparations for the GCOS Implementation Plan, and the development of Variable/Network Specification Sheets. The meeting was held in parallel with the GOOS Biogeochemistry Panel, which is coordinated by the International Ocean Carbon Coordination Project (IOCCP).

7. WMO and IOC/UNESCO jointly coordinate through JCOMM global efforts to implement operational ocean forecasting services

World Climate Research Programme (WCRP).[4] Through its scientific leadership to consolidate global and regional efforts to understand the dynamics, the interaction and the predictability of the coupled ocean-atmosphere system, significant improvement has been made in understanding climate variability and changes, as well as the benefit of society and the environment in which we live – such as predictive experiments for the future state of climate system and project how it will evolve under different emission scenarios.

13. Coordinated scientific activities by WCRP include the Coupled Model Intercomparison Experiment Project (CMIP) that serves as the key tool to better understand past, present and future climate changes arising from either natural, unforced variability or in response to changes in radiative forcing in a multi-model context. For its 5th phase of CMIP (CMIP5) during 2010–2013, more than 20 modelling centres produced a set of such complex predictions and made their results freely available to scientists worldwide. More than 350 articles were published using this unprecedented dataset. Many of them were reviewed in the most recent Report of IPCC entitled "Climate Change 2013: The Physical Science Basis", which was unveiled in September 2013.[5] The design and organization of the 6th phase, CMIP6[6],are aiming to address three broad scientific questions in support of the WCRP Grand Scientific Challenges[7]; 1) how the Earth System respond to forcing, 2) the origins and consequences of systematic model biases, and; 3) modality to assess future climate changes given climate variability, predictability and uncertainties in scenarios.

14. Oceanographic research in support of decision-making is developing especially fast in relation to the regional sea-level rise. While the global mean sea level is expected to rise in the 21st century up to approximately 80 cm, depending on the carbon emissions, the CMIP5 projects high regional variability of this increase. These results are corroborated by observations showing an increasing pace of sea-level rise with maximum around the Philippines. There is significant and unavoidable uncertainty in estimates and predictions of sea level and many other variables describing the future climate, and it is therefore extremely important that decision makers are able to take this uncertainty into account. Development of scientific methods for treatment of uncertainty in climate-

operational forecasting agencies, under the WMO framework and with technical guidance provided by WMO Groups of Experts. By now, five (5) national sub-projects of CIFDP are under way – Bangladesh, Dominican Republic, Fiji, Indonesia and Shanghai/China, in view of further extension to other countries that express their need for such a project.

31. Launched at the Third World Climate Conference (WCC-3) (Geneva, 31 August – 4 September 2009),[12] the Global Framework for Climate Services (GFCS) is a global partnership of governments and organizations that produce and use climate information and services, led by WMO. The 17th World Meteorological Congress welcomed progress and growing number of partners in the initiative to improve the provision and use of climate services in priority areas of agriculture and food security, water management, health and disaster risk reduction. The e

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