WCRP
World Climate Research Programme

WMO IOC ICSU International Council for Science

WCRP was established by the World Meteorological Organization (WMO) and the International Council for Science (ICSU) in 1980 as an outcome of the first World Climate Conference in 1979. The Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO) joined as a sponsor in 1993. WCRP mission is to facilitate analysis and prediction of Earth's climate system variability and change for use in an increasing range of practical applications of direct relevance, benefit and value to society. The two major objectives of WCRP are to determine the extent to which climate can be predicted, and to determine the extent of human influence on climate.

For all numerical climate predictions on time scales from several months to years and out to decades, there is a need to represent the initial observed state of the atmosphere and oceans. Three completed WCRP experiments (the Tropical Ocean Global Atmosphere, TOGA, project, the World Ocean Circulation Experiment, WOCE, and the Arctic Climate System Study, ACSYS) enabled better understanding of ocean circulation and its interactions with the atmosphere. TOGA, in particular, helped to improve predictions of the El Niño/Southern Oscillation and exploit this predictability in a variety of seasonal predictions. WOCE provided an unprecedented snapshot of the global ocean circulation. The decade of ACSYS concluded with detection of the massive changes in Arctic sea ice. Availability of satellite observations, global deployment of the autonomous Argo buoys, successful demonstration of the capability to assimilate ocean information into predictive models under the framework of the Global Ocean Data Assimilation Experiment (GODAE), and increasing accuracy of pioneering ocean data syntheses by CLIVAR are contributing to improved understanding of the role of the ocean in climate variability and change and to creating the prospects for climate prediction across a variety of timescales. In order to exploit the predictability of the coupled climate system, it is imperative to correctly represent in models the fluxes of momentum, heat, moisture, gases and particles between ocean and atmosphere, to which SOLAS, CLIVAR and GEWEX contribute, and to cover gaps in global ocean observations including areas covered by sea ice. This last challenge is being addressed by the WCRP CliC project and its partners.

WCRP is committed to provide climate information of direct benefit and value to society and is working on meeting the challenge of providing the required information in a timely manner, at regional scale and over decades. WCRP supports the vision of OceanObs'09 conference. Its imperatives for actions are in line with the WCRP's commitments. In the coming years WCRP will work on the implementation of a Global Framework for Climate Services of which the ocean information will be an integral and essential component. A comprehensive and sustained ocean observing system will lead to a better understanding of ocean-atmosphere interactions and the role of the ocean in predicting climate change on timescales from seasons to millennia. WCRP will actively work on implementing the recommendations of the OceanObs'09 conference on such ocean observing system.

In partnership with the other Global Environmental Change programmes WCRP will continue to promote the free and open data access and expansion of the use of best practices in ocean data management. In collaboration with START it will keep its work on the development of capacity to observe and predict climate.