

## **Climate Services Perspective**

Takafumi Umeda

(Climate Prediction Division, Japan Meteorological Agency)

JMA is monitoring global surface climate in order to detect climate variability and change (e.g. extreme climate events, global warming). JMA produces weekly, monthly, seasonal, and annual reports on temperature, precipitation and hazardous climatic events (flood / drought / tropical cyclone) by using SYNOP and CLIMAT data collected through GTS. Also, JMA calculates the long-term trend of annual global average temperature to get hold of climatic change caused by global warming using land surface data (CLIMAT, GHCN-Monthly) and the result of sea surface temperature analysis (COBE-SST).

JMA is operating a climate data assimilation system (JRA-JCDAS) based on satellite, upper air (TEMP), surface (SYNOP), and ship data. By using JRA-JCDAS, COBE-SST, CLIMAT reports, and satellite observations, JMA provides diagnosis information on the climate system as background of extreme climate events.

Weather and climate reports for stations should be produced and circulated through GTS more certainly for the world-wide monitoring of extreme events. More historical datasets are necessary for a re-analysis over a longer time period (e.g. JRA-55). Accurate measurements are also important especially to detect variability and change of global average temperature precisely.