First session of

South Asian Climate Outlook Forum (SASCOF-1)

Pune, India, 13-15 April 2010

Consensus Statement

The summer monsoon plays a crucial role in the entire socio-economic fabric of South Asia, highly influencing all walks of life. The summer monsoon (June–September) rainfall accounts for 75–90% of the annual rainfall of the most of the countries of the region. Several studies highlight the critical dependence of crop production on monsoon rainfall. The summer monsoon rainfall is also important for hydroelectric power generation and meeting drinking water requirements. Thus, being essentially driven by agricultural growth, the economies of all South Asian countries are inextricably tied to the performance of the summer monsoon. Therefore, prior information about the performance of the monsoon over South Asia will always be helpful for the society in planning risk management strategies.

Although substantial progress has been made in its understanding, prediction in respect of different aspects of the monsoon, particularly rainfall during the season with sufficient lead time, has remained a challenge for meteorologists/researchers across the globe even today. Monsoon prediction and outlook is therefore a shared challenge globally and particularly for the South Asian nations.

In Asia, such shared knowledge, information and outlook for the entire continent for the monsoon season have been provided through a Regional Climate Outlook Forum (RCOF) being coordinated by China since 2005. Considering that Asia is a vast continent with large differences in the climatological conditions, Regional Association II (Asia) of World Meteorological Organization (WMO) recommended the establishment of sub-regional RCOFs devoted to specific needs of groups of countries having similar climatic characteristics.

In a meeting convened by WMO, the Directors General of the National Meteorological and Hydrological Services (NMHSs) in South Asia and Permanent Representatives (PRs) of the respective countries with WMO, at the Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, on 6 August 2009, the PRs of south Asian nations with the WMO had unanimously agreed to establish a South Asian Climate Outlook Forum (SASCOF), to be implemented from 2010 onwards. The main objectives of SASCOF are the following:

1. To review the progress made in understanding and long range prediction of summer monsoon both regionally and globally;
2. To make available detailed information on climate variability in South Asia for dissemination along with the seasonal outlook;
3. To provide a platform for the stakeholders of SASCOF to share and exchange experience and knowledge on summer monsoon and its prediction;
4. To initiate capacity building/human resource development activities for the South Asian region, particularly in seasonal prediction;
5. To build collaboration and partnerships among the members of SASCOF for mutual benefit;
6. To identify needs of user sectors through a dialog among different groups.

Consequently, the first session of SASCOF (SASCOF-1) was held at Pune, India during 13-15 April 2010. Representatives from NMHSs of the South Asian countries namely Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka, experts from WMO Global Producing Centres of Long Range Forecasts namely Japan Meteorological Agency (JMA), Korea Meteorological Administration (KMA) and United Kingdom Meteorological Office (UKMO) along with inputs from

Meteo France, other global/regional centers like International Research Institute for Climate and Society (IRI), USA, Regional Integrated Multi-hazard Early warning System (RIMES), Thailand, Asia Pacific Economic Co-operation Climate Centre (APCC), Korea and South Asian Association for Regional Cooperation (SAARC) Meteorological Research Centre (SMRC), Bangladesh, along with inputs from Beijing Climate Centre (BCC) and various institutes in India namely Indian Institute of Tropical Meteorology (IITM), Indian Institute of Science (IISc), National Centre for Medium Range Weather Forecasting (NCMRWF), Cochin University of Science and Technology (CUSAT), Centre for Development of Advance Computing (C-DAC), etc. participated in SASCOF-1.

The Forum deliberated on various observed and emerging climatic features which are known to influence the performance of monsoon, such as El Niño conditions over the equatorial Pacific Ocean, sea surface temperature conditions over the Indian Ocean, winter and spring snow cover and surface temperature anomalies over Northern Hemisphere, to reach a consensus climate outlook for the 2010 summer monsoon season rainfall over South Asia. The experts presented forecasts of sea surface temperature conditions over the Pacific Ocean and Indian Ocean and expected rainfall distribution over the South Asia, using statistical and global dynamical models including Atmospheric General Circulation Models (AGCMs), Coupled General Circulation Models (CGCMs) and approaches like Multi-Model Ensemble (MME) techniques.

The Forum noted that the present skills of dynamical as well as statistical models in predicting the monsoon rainfall have limitations. The Forum agreed that, to improve the prediction skill of the models, more collaboration among operational long range forecasters of the South Asia among themselves and research institutes of the countries of the region are required. Active interaction with the concerned global and regional experts would be of the immense help. The Forum strongly recommended the initiation of a capacity building/human resource development plan for the South Asian nations, particularly for seasonal prediction. The Forum agreed to issue a consensus outlook with following observations:

El Niño conditions over Pacific:

The El Niño conditions over equatorial Pacific Ocean, that remained weak during mid June to October of 2009, started strengthening from late October and peaked in the third week of

December. From late December 2009, the El Niño conditions have started weakening. The latest forecasts from a majority of the dynamical and statistical models indicate high probability for the present El Niño conditions to weaken further and remain near-neutral during the ensuing monsoon season. A few models indicate the development of weak La Niña by July-August 2010. It may be mentioned that El Niño forecasts made at this time of the year exhibit considerable spread and uncertainty.

Conditions over Indian Ocean:

Most of the forecasts indicate that presently observed basin-wide warm sea surface temperature anomaly in the Indian Ocean is likely to persist during the monsoon season.

Rainfall over South Asia:

Based on the prevailing global climate indicators and forecasts from statistical and global dynamical models, rainfall over South Asia, in general, is likely to be within the normal range.