

Drafting of Strategic Plan for World Weather Research Program (WWRP):

Tropical Meteorology Research Program (TMRP)/Monsoon

*World Meteorological Organization
CAS Working Group on Tropical Meteorological Research
Guangzhou, China 22-24 March 2007*

Past Activities

- **Projects**
 - M2 Project (Long-Term Asian and African Monsoon)
 - IPEAM/M1 Project (East Asian Monsoon Research)
 - M3 Project (American Monsoon)
- **Monsoon Activity Centers**
 - Delhi
 - Kuala Lumpur
 - Nairobi
- **International Workshop on Monsoons**
 - IWM-1 1995, Bali Indonesia
 - IWM-2 2000, Delhi India
 - IWM-3 2004, Hangzhou China
 - WMONEX 25+ 2006, Kuala Lumpur Malaysia
- **Monsoon Training Workshops**
- **Publications**
 - *Global Monsoon Systems: Research and Forecast (2005)*
 - World Scientific Series on East Asian Meteorology

CAS Working Group on Tropical Meteorology Research Meeting (*March 2007*)

- Focus (CAS XIV, Cape town 2006)
 - Scientific knowledge on natural hazards
 - Natural disaster reduction through early warning
- Revision of TMRP Structure
 - Emphases
 - Tropical Cyclones
 - Monsoon
 - Consolidation within each subcomponents
- Proposed Strategic Plan
 - Continue traditional TMRP strength on priorities of monsoon region NMHSs and operational community

Strategy

- **Climate Scales: Global change, Decadal, Interannual, Seasonal, down to intraseasonal**
 - Cooperate with and support WCRP monsoon activities
 - Cooperate with regional and international programs (e.g., APEC Climate Center)
 - Research on Impacts on local weather
- **Weather Scales: Convection, Meso-, Synoptic, up to Intraseasonal**
 - Regional and Local phenomena, effect of terrain
 - Top priority: Torrential rainfall, flooding

Activities

- **Scientific and Training Workshops**
 - Review state of the art, current issues and future directions
 - Facilitate researchers - forecasters interactions
 - Relating research results to forecasters on an ongoing basis
 - Update WMO Report on Monsoon for Member NMHSs.
- **WMO Monsoon Activity Centres**
 - New Delhi (IMD:: South Asia)
 - Kuala Lumpur (MMS: Southeast Asia)
 - Beijing (CMA, East Asia)

Proposed Activities

- Enhanced Cooperation among NMHSs
 - Role of Monsoon Activity Centers?
- Joint Monsoon Forecast Meetings in East Asia
 - East Asian summer monsoon
 - East Asian winter monsoon
- Joint Monsoon Forecast in other regions?
- Joint Monsoon Forecast with Regional Centers (e.g., APCC)?

Research Projects

- Weather scale monsoon research through regional and international cooperation (below are examples)
 - MAHASRI weather-scale components
 - Convection scale, diurnal cycle, terrain effects
 - South Asia
 - STORM (Severe Thunderstorms – Observations & Regional Modeling)
 - Subtropical East Asian summer monsoon rainfall experiments
 - Southern China Torrential Rainfall Experiment (China 973)
 - Southwest Monsoon Experiment

NMHSs Proposed Issues

- **Studies**

- Southeast Asia monsoon research
 - Weather and climate of the Indochina region
- Asian winter/Maritime Continent monsoon research
 - Heavy rainfall events, cold surges and MJO interactions
- Regime shift and abrupt changes
 - Critical in empirical based forecasts

- **Operation Topics**

- Monsoon onset and strength forecasts
 - Develop methodology and international coordination in issuing forecast products
- Intensity scale of monsoon disturbances
 - International or regional Intensity Scale for mesoscale convective systems (similar to TCs)
- Monsoon terminology and monsoon index
 - Standardization

- **Development of User Applications**

Partner Programs

- Asian Monsoon Year
(WCRP/CLIVAR&GEWEX)
- MAHASRI (WCRP/GEWEX)
- YOTC (Joint WCRP - THORPEX)
- TPARC (THORPEX)
- VAMOS/MESA (CLIVAR)

Current Tasks

- Strategic Plan for WWRP
- Consolidation of IPEAM/M1, M2, M3 into IPEAM, rename to IPM (International Panel on Monsoon)
 - Executive Committee (Monsoon region members, Major programs)
 - Corresponding Members (Monsoon region members)
 - Science Committee (New subcommittee)
- IWM-4:
 - Time, Location, Scope, Output
 - Discussed possible joint meeting with CLIVAR AAMP