

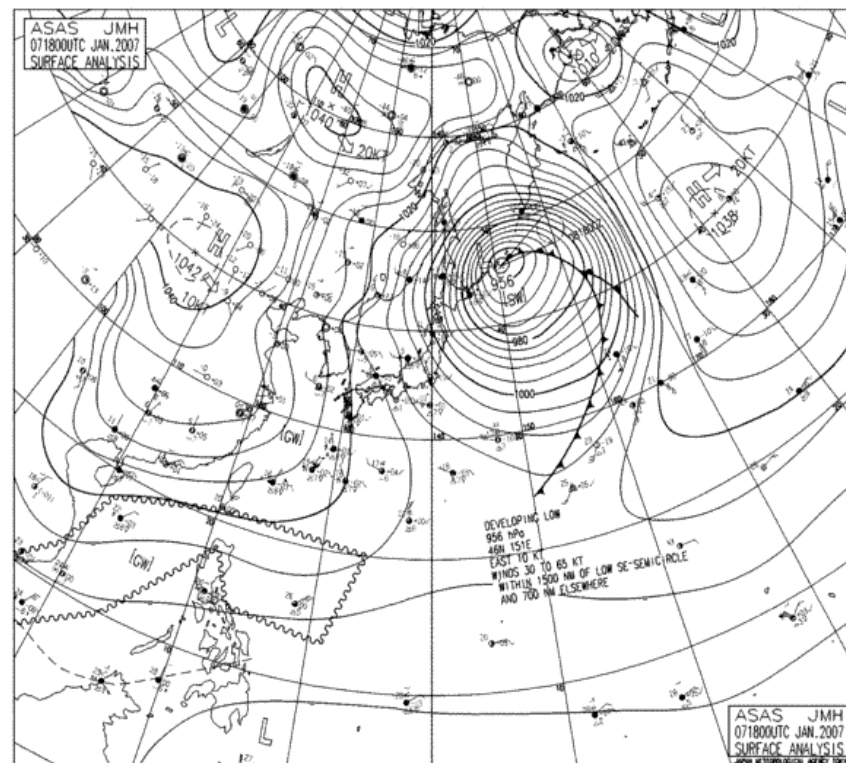
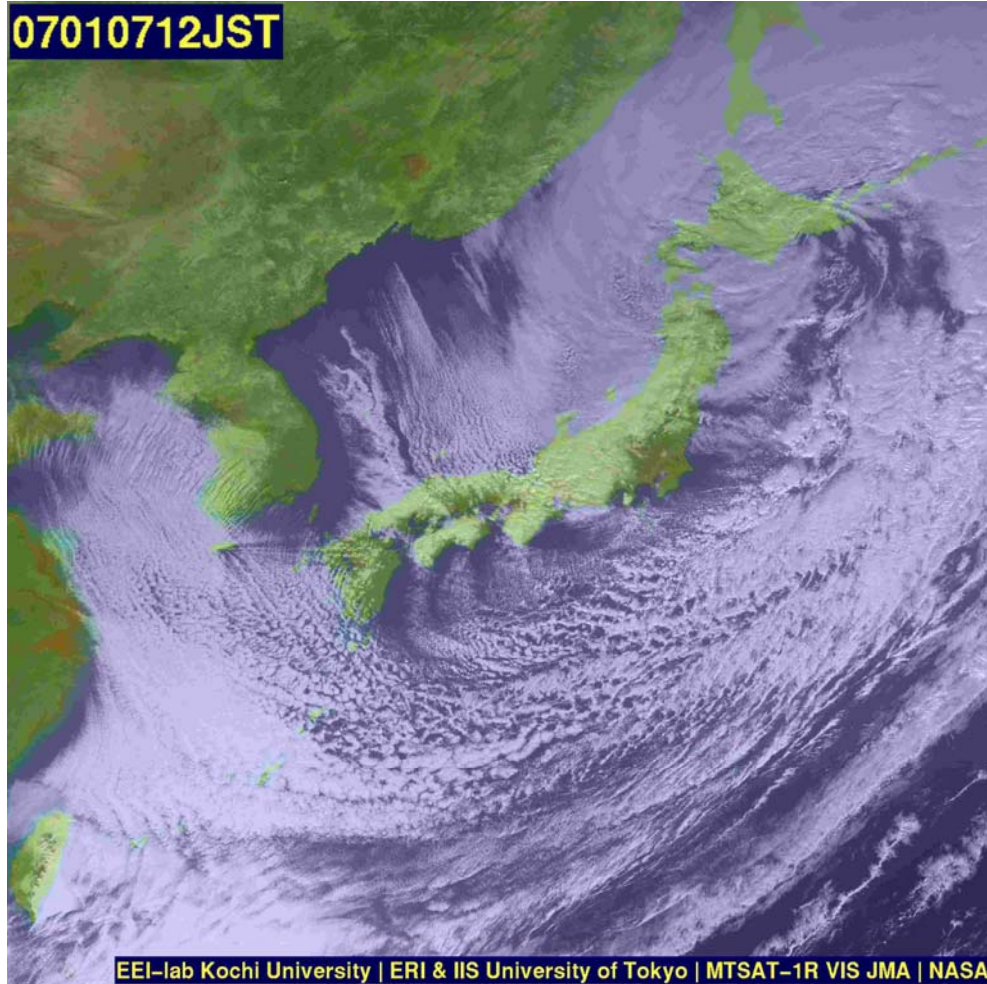
Current Status of MAHASRI and Prospect for the AMY-2008

**The 1st MAHASRI/AMY Workshop
January 8, 2007 at Tokyo, Japan**

Jun Matsumoto

**Department of Geography, Tokyo Metropolitan University
Japan Agency for Marine-Earth Science and Technology (JAMSTEC)/
Institute of Observational Research for Global Change (IORGC)**

<http://weather.is.kochi-u.ac.jp/>



<http://weather.is.kochi-u.ac.jp/>

<http://www.jma.go.jp/jma/indexe.html>



GEWEX Americas Prediction Project (GAPP)

Mackenzie GEWEX Study (MAGS)

Baltic Sea Experiment (BALTEX)

Northeast Asia

MAHASRI

East Asia

Tibet/Himalaya

Large Scale Biosphere-Atmosphere Experiment in Amazonia (LBA)



African Monsoon Multidisciplinary Analysis (AMMA)

La Plata Basin (LPB)



Tropics

Murray-Darling Basin (MDB)



Data Management

Water and Energy Budget Studies

Worldwide Integrated Study Extremes

Stable Water Isotope Intercomparison Group

Transferability

Water Resource Applications Project



MAHASRI Monsoon Asian Hydro- Atmosphere Scientific Research and Prediction Initiative

(Cf. MAHA=Great, Sri=Saint in Sanskrit)

Two LOGO candidates have been designed by
JAMSTEC Secretariat, Ms. Tamaki Uchida

<http://mahasri.cr.chiba-u.ac.jp/>



Objective

"To establish hydro-meteorological prediction system, particularly up to seasonal time-scale, through better scientific understanding of Asian monsoon variability".



Key Science Issues (1)

- Atmosphere-ocean-land interactions in the Asian monsoon system
- Effect of various-scale orography on monsoon rainfall
- Scale-interactions among diurnal, synoptic, intraseasonal and seasonal variability of Asian monsoon rainfall




Key Science Issues (2)

- Effect of human influences (i.e., aerosols, land-use change, and greenhouse-gas increase) on hydro-meteorological variations in Asian monsoon regions – Collaboration with MAIRS



Differences from GAME? (1)

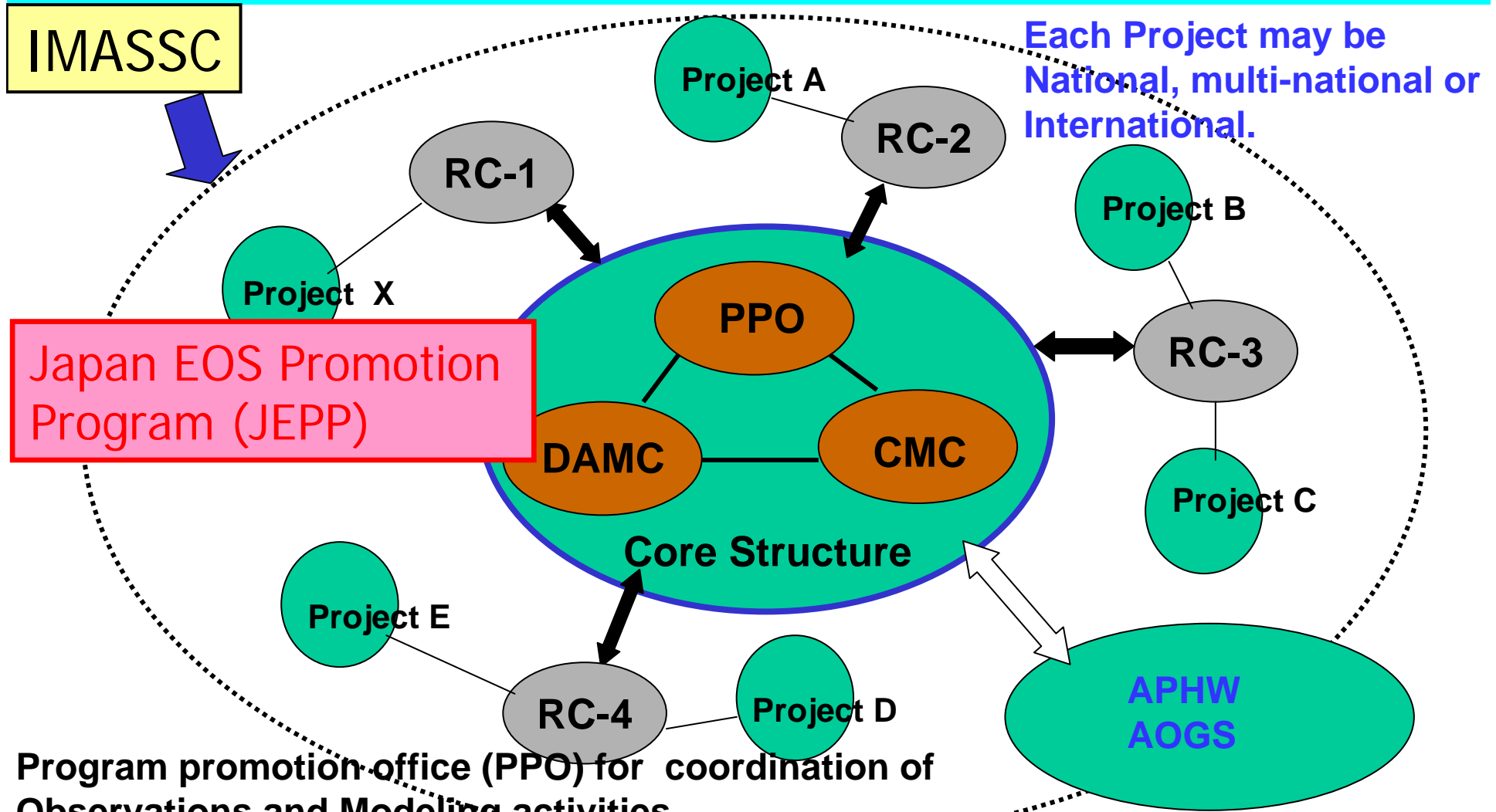
- More concrete collaboration with Asian hydrometeorological agencies and research institutes
 - Present proto-type model for the hydrometeorological prediction system
 - Expansion the target field not only air-land interaction but also air-land-sea interaction, thus closer collaboration with CLIVAR community
 - Expansion of the target area over the Maritime Continent, Western Pacific, and India, while retreat from Siberia
- 

Differences from GAME ? (2)

- Targeting also winter monsoon
- Main time-scale: weekly to seasonal for prediction, year-to-year variability for research including long-term data rescue
- Assessing human impact on Asian monsoon
- Coordination of multi-countries multi-projects
- Cooperation with GEOSS

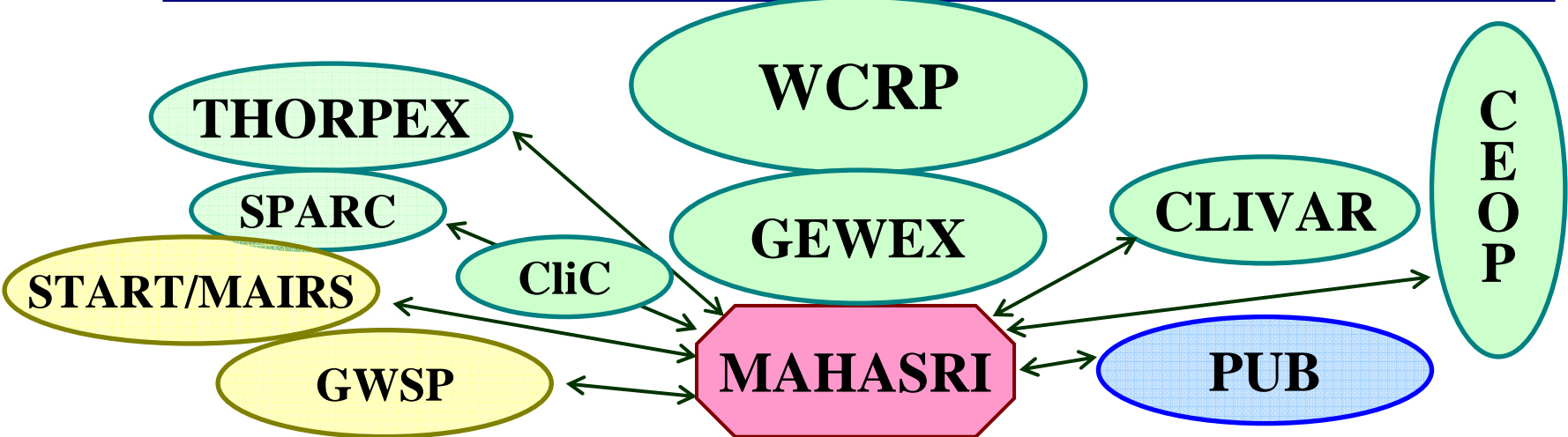


Structure of (MAHASRI)

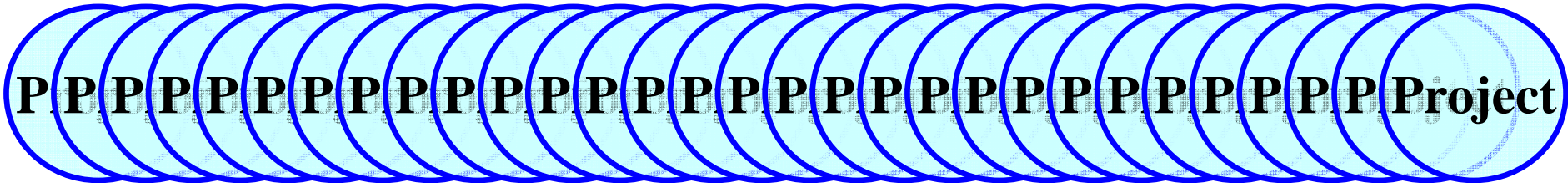


Program promotion office (PPO) for coordination of Observations and Modeling activities
Coordinated Modeling Center (CMC)
Data Archive & Management Center (DAMC)
Regional Centers (RC)

Structure of MAHASRI



International MAHASRI Science Steering Committee (IMASSC)



Major MAHASRI activities in 2005-2006.1

- August 28, 2005: 1st International Post-GAME Planning Workshop at Kyoto, Japan
- November 1, 2005: 2nd International Post-GAME (MAHASRI) Planning Workshop at Tokyo, Japan
- November 2-4, 2005: 1st Asian Water Cycle Symposium, Tokyo, Japan
- November 4-6, 2005: Workshop on Hydroinformatics and atmospheric sciences, Kanchanaburi, Thailand
- Early December, 2005: Submit MAHASRI Science Plan draft (Ver. 1) to the GEWEX SSG members
- Mid-January, 2006: Proposal in the GEWEX-SSG, Dakar, Senegal. Conditionally approved as Post-GAME CSE in Asia (Also by JSC in March).

Major MAHASRI activities- Sept., 2006

- April 4-7, 2006: Meeting in the Symposium on Asian Winter Monsoon, Kuala Lumpur, Malaysia
- July, 2006: Review of the science plan by the CLIVAR community
- August 7-8, 2006: Informal meeting with IAP etc., Beijing, China.
- August 18-20, 2006: The 1st Vietnam-Japan Joint Workshop on Asian monsoon, Halong, Vietnam
- September 15, 2006: APCC SAC meeting, Busan Korea
- September 26-28, 2006: Capacity building in Asia, Bangkok, Thailand.
- September 29-30, 2006: Workshop on East Asian Monsoon Experiment (EAMEX), Chung-Li

Major MAHASRI activities- Oct., 2006

- October 9-13, 2006: Pan-GEWEX meeting, Frascati, Italy. Submit revised version of the MAHASRI Science Plan (Ver. 4.1)
- October 18, 2006: Asia Pacific Association of Hydrology and Water Resources Meeting (APHW) at Bangkok, Thailand. Special session on “GEOSS and MAHASRI” is organized.
- October 19-20, 2006: The 1-st International MAHASRI Science Steering Committee Meeting, Bangkok, Thailand. Start drafting of Implementation Plan.



New field observation plan

- **Asian Monsoon Year (AMY)-2008
in collaboration with MAHASRI**

Japan- JEPP

China- 973AIPO

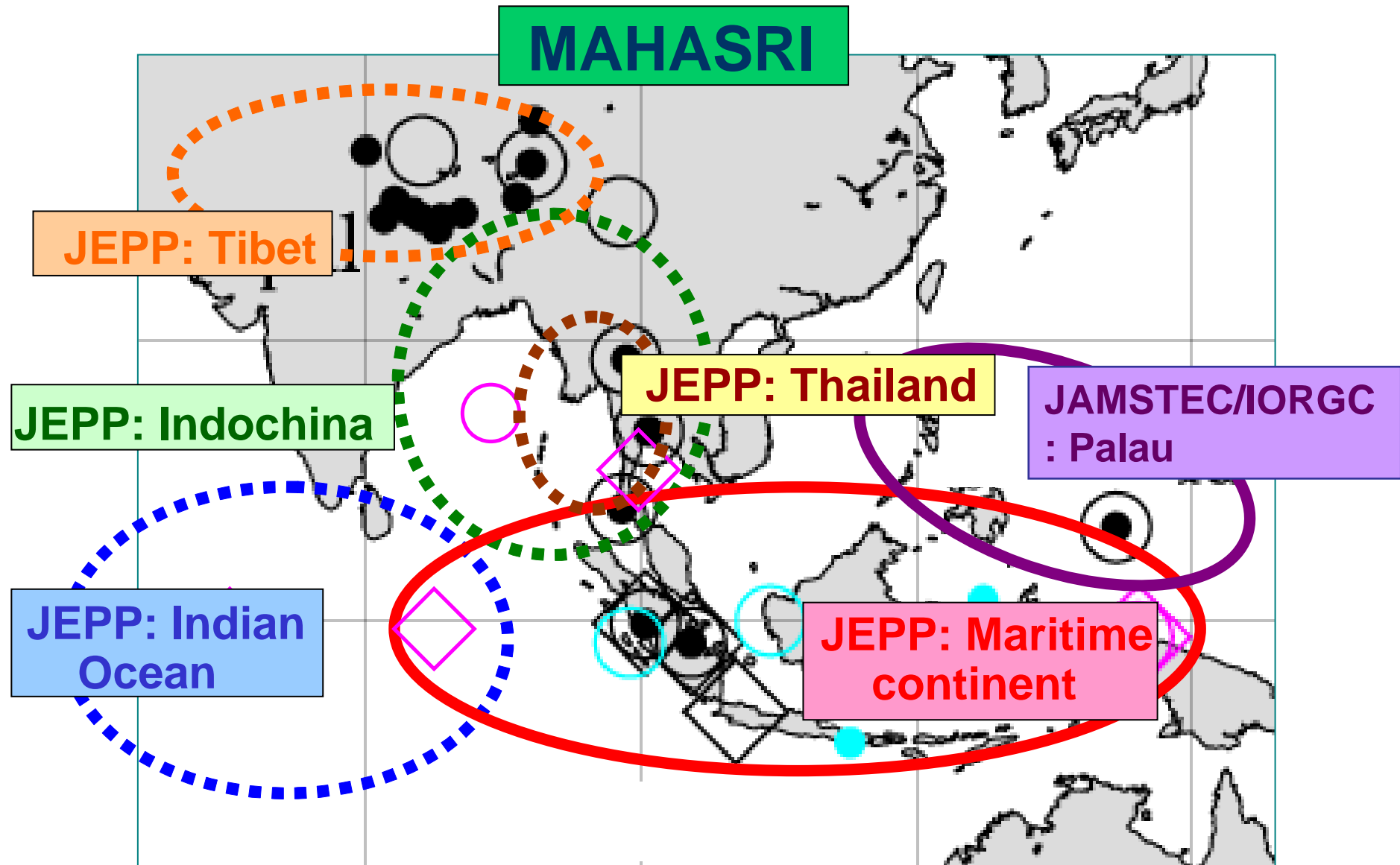
India- CTCZ, STORM

Australia (Planned)

AAMP/CLIVAR



MAHASRI and related Japanese Projects (JEPP)



Crosscutting theme/Common Targets (1)

- Trend/gap detection of changing environments
 - Quantity/extremes, characteristics/cause/attribution
 - Hydro-meteorological and other variables
 - Share information and statistical tool
 - Integrate knowledge all over the monsoon Asia
- Diurnal cycle
 - Peak time/amplitude, dependence on ISV, Seasonal change
 - Using both in-situ and satellite data
 - Integrate knowledge all over the monsoon Asia
- Feasibility studies on seasonal prediction data
 - Hindcast/forecast data from the APCC/MME (and/or JMA)
 - Assessing/evaluating current & potential values for social application in each region with downscaling
 - » water resources management, reservoir, agriculture, ...

Crosscutting theme/Common Targets (2)

- Exchange ideas, experiences, ...
 - Diagnosis: lows, vortexes, tropical cyclones, ...
 - Case studies: extraordinary storms and floods
 - ➔ Training seminar for operational staffs & students?
- ➔ To synthesize and submit a special scientific article to an international journal?
 - Long term trend all over monsoon Asia
 - Diurnal cycle all over monsoon Asia
 - Special issue on the application of seasonal forecasting information for society

Crosscutting theme/Common Targets (3)

- Application is all right, but more basic research should be also relevant.
- Examine the role of dynamic downscaling in the seasonal forecast with quantifying uncertainties.
- Roadmap, due dates of jobs to be done.
- Set the final target: journal paper, datasets, ...
- Fully utilize GAME datasets.
- Sub-project “regional re-analysis” (over land)
 - run LSMs-HMs by long-term “forcing data”

IMASSC Structure (Proposal)

- Chair: Jun Matsumoto
- Co-chair: Hansa Vathananukij, Wu Guoxiong, (India, G.S. Bhat?)
- Advisory board: Fu Conbing, T. C. Chen, Bin Wang, Ding Yi-hui, Tetsuzo Yasunari
- ISSC member: Takehiko Satomura, Johnny Chan, Kooiti Masuda, (C.K.Park) , Nguyen Thi Tan Thanh, Taikan Oki, Manabu Yamanaka, Fadli Syamsudin, Taiichi Hayashi, Nazrul Islam, (IMD?), Hirohiko Ishikawa, (CMA?), Jun Asanuma, Azzaya Dolgorsuren

Working group **chairs** and members

- Climatic trend/gap: **Jun Matsumoto**, B.N. Goswami, Saisnee Budhakoontharoen, Azzaya Dolgorsuren,
- Diurnal cycle: **Takehiko Satomura**, Manabu Yamanaka, Nazrul Islam,
- (Seasonal) prediction and its applications: **Hansa Vathananukij**, (C.K. Park?), (Shingo Yamada: JMA),
- Land surface re-analysis/ hydroclimatology: **Taikan Oki**, Shinjiro Kanae, Kenji Tanaka, Johnny Chan, Shar-Newas,

Working group chairs and members

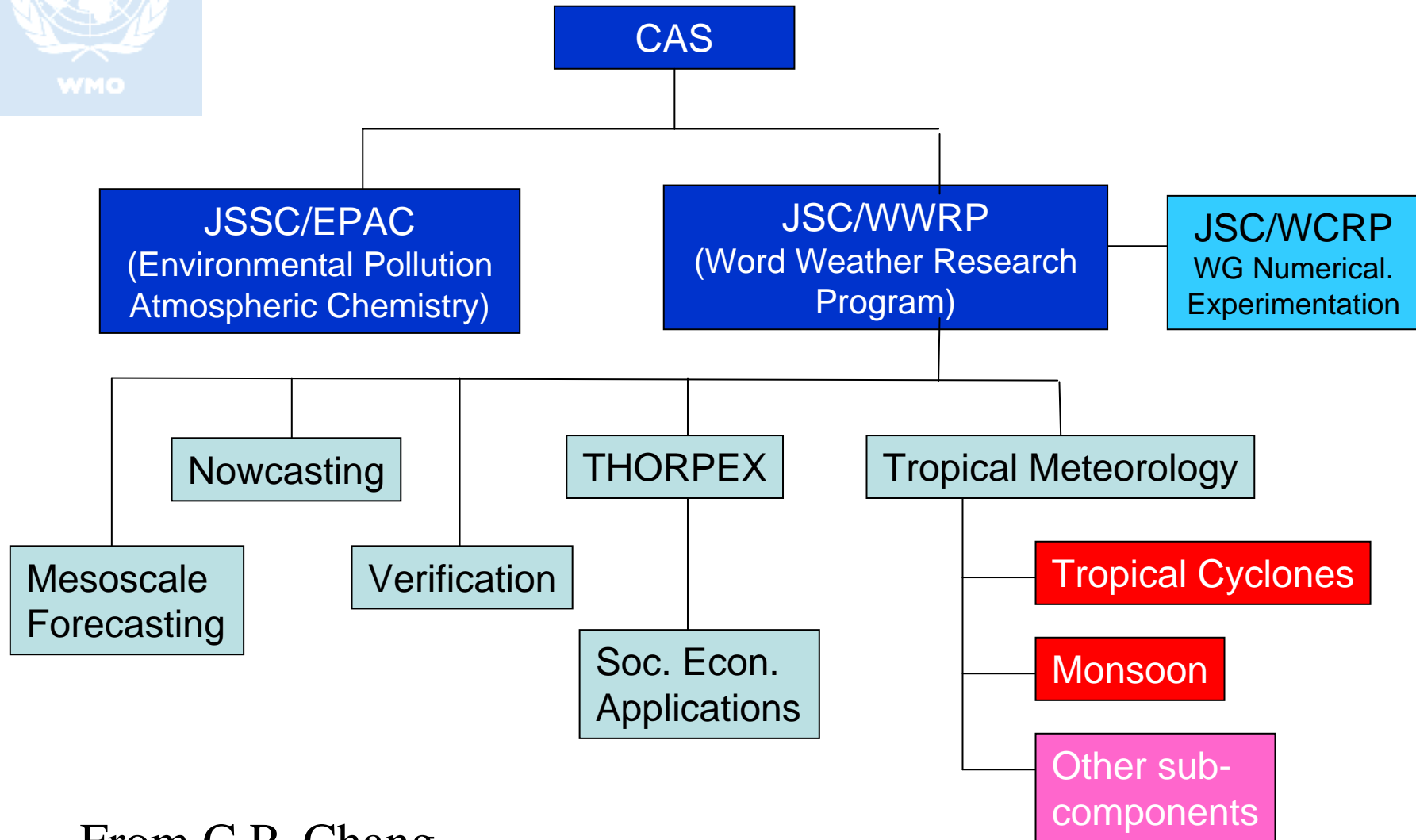
- AMY: Wu Guoxiong, Jun Matsumoto, T.C. Chen, (CMA), (G.S. Bhat?), (IMD?), Nguyen Thi Tan Thanh, Moten Subramanium, Theeranun Rakutabutr
- Data archiving and management: Kooiti Masuda, Yasushi Agata, C.K. Park

Time Schedule in 2007(1)

- Jan. 8/10 : The 1-st MAHASRI/AMY Workshop: at Tokyo, Japan
- Jan. 22-25:GEWEX-SSG at Hawaii, USA.
- Feb. 19-22:CLIVAR-AMMP at Hawaii, USA.
- Mar. 22-24: WMO/CAS WG Meeting on Tropical Meteorology Research at Guangzhou, China
- Mar. 26-30: 28th session of the WCRP-JSC at Zanzibar, Tanzania
- Apr. 23-25: 2008 Asian Monsoon Year (AMY08) International Workshop at Beijing, China



CAS ORGANIZATIONAL COMPONENTS: 2006-2010



From C.P. Chang

WWRP/Working Group on Tropical Meteorology Research Meeting
March 2007, Guangzhou, China

1. Proposed Revision of TMRP Structure

- WMO Focus:
 - Scientific knowledge on natural hazards
 - Natural disaster reduction through early warning
- Emphasis:
 - Tropical cyclones
 - Monsoon

2. Proposed Strategic Plan for TMRP/Monsoon activities

- *Meso/Synoptic scale*: Foster and promote national/international programs
- *Climate scale*: Cooperate with WCRP monsoon activities
- *IWM Workshop Series*: Promote researcher-forecaster interactions
- *Monsoon Activity Centers*: Data archive and dissemination
- *Enhance cooperation between national meteorological services*

□ Relevance to MAHASRI

- Heavy rainfall, convection, diurnal cycle, terrain effects
- Meso and synoptic and intraseasonal scales = direct focus of TMRP
- Seasonal and longer scale = WCRP cooperation

Time Schedule in 2007 (2)

- Jun. 11-12: PSA Meteorology and Atmospheric Sciences Scientific Committee Meeting at Taipei
 - Jun. 13-17: Pacific Science Congress XXI (PSC21) at Okinawa, Japan
 - Jul. 2-13: IUGG XXIV 2007 Session JMS011 on Monsoon system at Perugia, Italy
 - Jul. 30-Aug. 4: The 4 th AOGS 2007 Session AS07 GEOSS, CEOP and MAHASRI at Bangkok, Thailand
 - Aug. 9-13 : MAIRS/CEOP Workshop on semi-arid region at Lanzhou, China
- 

Long-term Time Schedule

- October, 2006-March, 2010: Research phase I
(2006-2007: Build-up new observation systems)
- 2008(-2009): IOP-year (AMY: Asian Monsoon Year)
- 2011-2014: Research phase II
- 2015: Concluding phase



Aims of this workshop

- To share the scientific questions needed for better understanding and predictability of Asian monsoon.
- To identify the needs for observations, analyses and modeling for solving the above scientific questions.
- Find the way to conduct the international special observation on Asian monsoon (MAHASRI-IOP) coordinated as AMY (or IMY) in 2008.



Workshop Program

January 8

- 1. Opening Address**
- 2. Current Status of MAHASRI and Prospect for the AMY-2008**
- 3. Science and Observation Plans in each project**
- 4. Observation facilities contributing to AMY in each country**
- 5. Coordination of Observations in the AMY-2008**
- Reception

January 10 14:00- at The Univ. Tokyo

- 6. Data Management and Policy**
- 7. Coordination with modeling**
- 8. Coordination with applications**
- 9. Implementation Planning for the AMY-2008**
- 10. General Discussions**



**I expect active discussions on MAHASRI
and AMY/IMY during two days.**



Thank you!

