

Road Map Mission

23 April – 20 May 2006

- **Mr. Terry Malone**, Bureau of Meteorology in Queensland, Australia
- **Mr. Warren Martin**, Senior Institutional Consultant, Australia

1. Institutional Component

2. Technical Component

Flood Forecasting System Review

Institutional Component

- *Current status*
- *Summary of Key Findings*
- *Where to From Now*
- *Actions Now for RFMMC*
- *Impacts on RFMMC*

Current Status

1. National Line Agencies & MRC prepare short term forecasts (1-5 days)
2. MRC has no mandate to issue flood warnings
3. Forecast limited to main stream
4. Main stream data (21 stations)
5. Data mainly collected manually

Processes are very manual and thus slow

**MRC's Regional Flood Center's Forecasting Unit
needs attention to improve effectiveness**

Summary of Key Findings from Mission

1. Flood warnings, issued by disaster management units, based solely on each countries own forecasts
2. MRC forecasts not used in warnings, but provide quality checks in Cambodia, Lao and Vietnam. Thailand accepts MRC forecasts
3. Each member country suggested MRC should prepare medium term forecasts, taking into account more details of tributaries

Unless MRC has a product, which adds value, its role in forecasting is in question

Where To From Now?

Short Term Aim – Maintain Current Short Term Forecasts

- Improve Timeliness
 - ✓ Ensure ANHIP & HYCOS stations fully operational & maintained regularly
 - ✓ Management of ANHIP/HYCOS remains with TSD. Status to be reviewed when permanency of RFMMC established
 - ✓ RFMMC assembles data from ANHIP/HYCOS and other available data and sends to National Line Agencies

MRC's Regional Flood Center continues to issue 5 day forecasts for mainstream but with no major enhancements of systems

Where To From Now?

Medium Term Aim – Produce 6-15 day Forecasts

- ✓ Adopt a 3 staged approach to develop forecasting framework
- ✓ All member countries have agreed to MRC producing medium term forecasts
- ✓ All member countries have committed to fully co-operate with MRCS/FMMP in development of forecasting framework
- ✓ No work is planned at this stage for assessment of impact and long term forecasts (one month to seasonal)

Given the 1995 Agreement and commitment of Member Countries, the RFMMC has commenced the development of systems to produce medium term forecasts

Actions Now for Regional Flood Center

1. Application of a 3 Stage Approach
 - **Stage 1** – Identify availability of data and secure agreements for data exchange within MRC's RFMMC in next 12 months
 - **Stage 2** - Design and build the data system framework, involving an operational database, data processing and communications
 - **Stage 3** - Select Modelling system and appropriate models to best suit data & user requirements, then install and calibrate
2. Get formalised protocols with National Line Agencies
3. Staffing – recruitment to match staged approach and expertise

as required

Producing a forecasting system for a medium term forecast is likely to take until 2009

Impacts on RFMMC

Modern Forecasting Unit Skills

- Hydrology
- Meteorology
- Hydraulics
- Database
- IT
- Communications (technical, social)
- GIS
- System Analysis
- Programmers (Fortran, web, etc)
- Administrative / Financial

Current Personnel 2006

Forecasting Unit 6.0 EFT

Administration /Financial 3.0 EFT

Library + Communication 1.0 EFT

Total 10.0 EFT

Proposed Personnel 2009

Forecasting Unit 8.0 EFT

Administration / Financial 4.0 EFT

Library + Communication 2.0 EFT

Total 14.0 EFT

Welcome to MRC's Regional Flood Center...



មជ្ឈមណ្ឌលគ្រប់គ្រង
និង

ការគ្រប់គ្រងនិងកាត់បន្ថយ
ហានិភ័យជំនន់ជ្រោះ

**REGIONAL FLOOD MANAGEMENT
AND MITIGATION CENTER**

Temporary housing of the Regional Flood Center



The New Regional Flood Center under construction



*Department of Meteorology and Hydrology (DMH), Ministry of
Agriculture and Forestry, Vientiane, Lao PDR*



Department of Hydrology, Ministry of Water Resources and Meteorology (MOWRAM), Phnom Penh, Cambodia





Southern Hydro-Meteorological Center, Ministry of Natural Resources and Environment, HCMC, Vietnam

National Hydro-Meteorological Center, Ministry of Natural Resources and Environment, Hanoi, Vietnam



*Thai Meteorological Department, Ministry of Information,
Communication and Technology, Bangkok, Thailand*



Under construction:

Water Operations Center, Department of Water Resources, Ministry of Natural Resources and Environment, Bangkok, Thailand





Royal Irrigation Department, Ministry of Agriculture and Cooperations, Bangkok, Thailand

➤ Flood Forecasting.....

➤ **Ockham's razor** is a principle attributed to the 14th-century English logician and Franciscan friar William of Ockham.

➤ Ockham's razor states that the explanation of any phenomenon should make as few assumptions as possible, eliminating those that make no difference in the observable predictions of the explanatory hypothesis or theory. The principle is often expressed in Latin as:

- **entia non sunt multiplicanda praeter necessitatem**

➤ which translates to:

- **entities should not be multiplied beyond necessity**