About RIMES

The Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES) is an international and intergovernmental institution that is registered with the United Nations and owned and managed by its Member States, through National Meteorological and Hydrological Services, for the generation and application of early warning information of different time scales from hours to centuries. RIMES interfaces with global centers of excellence to bring the best of science to the doorsteps of at-risk communities in 31 Member States and collaborating countries in Africa and Asia. RIMES helps build capacity of Member States in the observation and monitoring of seismic, tsunami, oceanic, meteorological, hydrological, and climate phenomena, and in the communication of associated risks, for appropriate and timely responses to warnings.

RIMES experts and scientists conduct regular and tailored courses, based on their extensive programme experience in the fields of numerical weather prediction, hydrology, early warning, disaster risk reduction, climate risk management, and climate change adaptation and development. RIMES' courses are:

- Innovative and the first of their kind in introducing novel frameworks, strategies, practices, and tools
- Comprehensive in that they integrate the latest scientific developments into established concepts and principles from various communities of practice and/or disciplines, including disaster risk reduction
- Practical for their focus on the application of concepts
- Engaging as they include a support network with which participants can optionally avail of
- Expert-driven in that they are facilitated by an institution (i.e., RIMES, and its partners) that relate scientific, institutional and societal aspects of disaster risks



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Regional Training Course on Paleoflood Hydrology in Flood Risk Assessment

26-30 May 2014
Bangkok, Thailand

Rationale

Assessment of risks associated with floods requires a long record of extreme flood events, beyond that of the instrumentation period. Flood records can be extended by hundreds to thousands of years by reconstructing past flood discharges, using geomorphological indicators (paleofloods) and documentary evidence.

Paleoflood hydrology is the reconstruction of the magnitude and frequency of recent (in areas without gauging records or human observation), past (last 50 years), historic (last 1000 years), or ancient (last 5000 years) floods, using geological evidence. Paleofloods are indicated by the effects of their passage that remain preserved long, for later interpretation. Evidence of the lasting effects of floods are derived from natural recording indicators (paleostage indicators (PSIs)), including sediments, erosional landforms (stripped soils, flood scarps, highflow channels), and other high-water marks (drift wood), tree impact scarps, and damage to vegetation (botanical paleoflood evidence). Paleoflood hydrology, thus, provides a direct record of the type of floods (largest floods) that are most likely to cost the greatest damage.

Although paleoflood hydrology's primary function is to extend flood chronologies over a period of time, it is also used in:

- Flood risk (and water supply) estimation using flood frequency analyses with long-term data
- Identifying climate-flood relationships (i.e. do floods cluster in time, and whether these clusters are related to varying or changing climates)
- Determining upper bounds of flood magnitudes based on long records
- Estimating long-term recharge in arid land

Within the last 30 years, paleoflood hydrology has emerged as an important and highly relevant component of earth science with numerous applications to the understanding of flood occurrences and the evaluation of flood hazards. Paleoflood hydrology has been employed in many regions of the world, such as in Australia, China, France, India, Israel, Japan, central Spain, and southwest USA, for compiling long-term flood records, and improving flood risk estimation and data management.

Objective

The course aims to train participants in paleoflood data collection, analysis, management, and application in flood risk estimation.

Content

The 5-day course covers:

- Module 1. Introduction to paleoflood hydrology
- Module 2. The scientific and societal value of paleoflood hydrology
- Module 3. Use of paleoflood and historical data for improving flood risk estimation
- Module 4. Paleoflood data collection and analysis
- Module 5. Paleoflood reconstruction in floodplains using geophysical survey data and hydraulic modelling
- Module 6. Methodological guide for paleoflood and historical peak discharge estimation
- Module 7. Flood frequency analysis using systematic and non-systematic information
- Module 8. Managing historical and paleoflood data using Geographical Information System

Method

The course shall be conducted in English. It shall involve presentations that highlight case studies and good practice examples, table-top simulation exercises, and field visit.

Resource Persons

The training will be delivered by leading experts and practitioners from RIMES, United States Geological Survey (USGS), and other partner agencies.

Target Participants

The course is tailored for:

- Practitioners involved in disaster risk management research
- Administrators, managers, and planners, responsible for preparing flood preparedness plans
- Officials from provincial and city administrations, especially development and planning authorities
- International NGOs, UN agencies, and the private sector

Participants who have responsibilities in the area of water resource development, flood forecasting, flood control, flood mitigation and preparedness, response and disaster management policy will gain the most from the curriculum. Some field level response background is desirable, but not essential.

To ensure effective delivery of the course, seats are limited to 25 participants. Registrations are, therefore, accepted on a first-come first-served basis.

Fee

The course fee is USD 1,000 per participant. This is inclusive of course materials, and refreshments and lunch during the course. Participants will be responsible for their own travel expenses, and arrangements such as airport transfers (and visa application, where necessary), food and accommodation, health/accident insurance, and other personal expenses. Please email rimes@rimes.int for more information, and/or to request a quote if sending three or more participants to the course.

Registration and Payment

Interested persons can apply as individuals, although preference will be given to those sponsored by their organizations. Registration and payment should be completed at least two weeks before the scheduled course. Pre-course information will be provided to those accepted into, and confirmed payment for, the course.

Substitution and Cancellation

If you are unable to attend, a substitute applicant is welcome to attend in your place provided the latter meets course, as well as visa processing (where necessary), requirements. On the other hand, cancellations of attendance must be advised in writing to RIMES at least 3 weeks prior to commencement of the course; in which case, a refund less 15% of course cost for banking charges and administrative fees will be made. No refunds are available for cancellations within 3 weeks prior to course commencement.