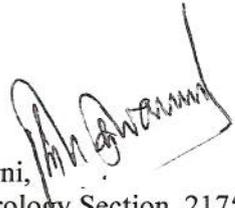
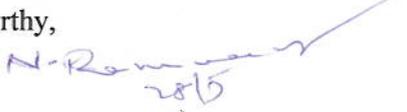


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# Interoffice Memorandum

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PMO-TCAP **Reference:** 08ET00551**Date:** 2008-05-26**Subject:** Travel Report - Chiang Mai, Thailand, 24 - 28 March 2008

## SUMMARY

### Purpose of travel

The duty travel was undertaken to Chiang Mai, Thailand during 24–28 March 2008 to conduct the mid-term progress review meeting of National Project Coordinators of the regional RCA project on Assessment of trends in freshwater quality using environmental isotopes and chemical techniques for improved resource management (RAS/8/104).

### Work done and results achieved

The objectives of this meeting were:

- To assess the progress achieved, particularly on application of isotopic and chemical techniques in studies at identified sites in each participating country and upgrade the workplans.
- To identify actions in support of Member States, for enhancing technology & knowledge transfer within the region, by way of expert missions, training courses, assistance with procurement of necessary equipment and materials that may potentially be available through the project to facilitate successful completion of national programmes.
- To discuss and develop a schedule for regional activities of the project for the 2009–2011 IAEA TC cycle.

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The meeting was attended by 14 national project coordinators (NPCs) from 13 participating countries, viz., Australia, Bangladesh, China, India, Indonesia, Korea (Republic of), Malaysia, Myanmar, New Zealand, Pakistan, Philippines, Thailand, Vietnam, and a number of local observers. The national project coordinators from Mongolia and Sri Lanka could not attend the meeting.

The results of field investigations in each study site and the progress of the project on the national level were presented during the meeting. The groundwater contamination issues presented by the participants could, generally, be classified into the following categories:

- Surface water – groundwater interactions
- Groundwater quality and contamination
- Groundwater recharge
- Contamination from the landfills

Field investigations on the study sites identified by each participating country at the start of the project implementation have, in most cases, been pursued. Isotope techniques ( $^{18}\text{O}$ ,  $^2\text{H}$ ,  $^{13}\text{C}$ ,  $^3\text{H}$ ,  $^{14}\text{C}$ , etc.) and chemical techniques have been employed in the field investigations to understand the recharge processes, Surface water – groundwater interactions, groundwater quality and contamination issues. In some of the studies, additional environmental isotopes such as  $^{15}\text{N}$ ,  $^{34}\text{S}$ ,  $^{87}\text{Sr}$ , and chemical tracers such as trace metals, nitrates, CFCs and  $\text{SF}_6$  have been used for identification of pollution sources and contaminant transport. The overall progress and implementation of the project is satisfactory.

The activities during the extension of the project for the period 2009–2011 were discussed and agreed upon by all the participating countries. During the extended period of the project, regional group activities will comprise one executive seminar for end users, one training course and 2 project coordinators' meetings.

It was general consensus that understanding processes involved in occurrence of pollutants and surface water – groundwater interactions is more important and while studying these processes a consolidated database should also be developed for future use. In this regards, it was agreed in the meeting that the project coordinators will collect data for different projects carried out in the past and if there is no specific project code these study areas will be listed under the present project. These data will be incorporated in the Agency's ISOHIS database and will be used for producing the new atlas on isotope hydrology for the region.

#### Lessons learnt

The participants made the following observations based on experiences in the project to date:

- Proper hydrogeological information is a prerequisite to successful isotopic studies. Aquifer characterization; hydrogeological mapping & sections; water table contour mapping; basic major ion chemistry & on-site measurements. Well information such as screening; depth; coordinates; usage history; etc is also worthwhile.
- On-site measurements of physico-chemical parameters can be inaccurate. The IAEA Hydrology Sampling video should be viewed by all field staff. The video also covers other sampling methods, laboratory preparation and analytical procedures.
- Excess ambit budgeting for equipment & analytical services should be avoided.
- Participants should be aware of the importance of timely submission of the six-monthly and annual reports complete with all the data and related information.
- The inclusion of end-users in the national studies shows an increased awareness of the utility of isotopic and chemical tracers to investigate water resource problems.

### Conclusions and Recommendations

- The meeting assessed the results and progress achieved, particularly on the application of isotopic and chemical techniques in groundwater studies at identified sites in each participating country. In light of experiences gained, the national work plans were reviewed and refined to cover the extension of the Project to 2011. The revisions have identified various requirements for successful completion of the project. The regional activities for the period 2009–2011 were discussed and agreed upon by consensus.
- Field investigations on the study sites identified by each participating country at the start of the project implementation have, in most cases (except Mongolia, Myanmar and Sri Lanka), been pursued. Isotope and chemical techniques have been employed in the field investigations.
- The active participation of end-users not only in national activities but also in other regional activities has increased the awareness and appreciation for application of isotope techniques in assessment of groundwater problems. The Technical Cooperation Department should support awareness workshops/seminars at the national and regional levels.
- With sustained efforts by the Agency, there is evidence that the applications are gaining wider acceptance in the region as a whole. Most of the member states have developed the complete or partial analytical facilities for isotopic analyses, either through the IAEA support or through the national funding, and a deeper competence in field applications. With some more assistance in the coming cycle, either through the national TC projects or through this project, most of the Member States will be self sufficient in isotope analysis of water samples near future.