



SUMMARY

**CCOP-GSJ/AIST Meeting on Groundwater Project in 2007
30 November – 1 December 2007, Novotel Rim Pae Resort,
Rayong, Thailand**



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December 2007

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Background

The CCOP-GSJ/AIST Project on Groundwater Assessment and Control in the CCOP Region is a 5-year project with the support of the Geological Survey of Japan, AIST. The project aims to evaluate groundwater resources and environments through its monitoring with 3 sub-projects:

- (1) Groundwater Environment and Management in the Urban Coastal Area,
- (2) Groundwater and Land Subsidence Monitoring and
- (3) Groundwater Evaluation Using Monitoring System.

These sub-projects are led by Japan, China and Korea respectively.

During the implementation of this project the Kick off Meeting was organized on 1-2 March 2005, in Bangkok, Thailand; the 1st Training Course on Ground Water was held on 31 October – 4 November 2005, also in Bangkok, Thailand and 2nd Training Course on Ground Water Programme was held on 25-27 September 2006, in Beijing, China.

The CCOP-GSJ/AIST Meeting on Groundwater Project in 2007 is the 4th Meeting within this project.

Objectives

The objective of the meeting is to present the research results from each Groundwater Sub-project leader country on the 1) Groundwater Environment and Management in the Urban Coastal Area, 2) Groundwater Evaluation Using Monitoring System, and 3) Groundwater and Land Subsidence Monitoring. During the meeting the discussion for the next stage of Integrated Groundwater and Geothermal Project is also open and CCOP Member Countries are encouraged to make the proposal for Groundwater Case Study of own country.

Programme

Day 1: 28 November 2007 (Wednesday)

Arrival of all participants and check-in at Fraser Place Urbana Langsuan Hotel, Bangkok

Day 2: 29 November 2007 (Thursday)

08:00-08:45 Pre-Registration at Fraser Place Urbana Langsuan lobby, Bangkok

08:45 Assemble at hotel's lobby for the departure to Rayong by bus

12:00 Lunch at the restaurant in Pattaya

13:30 Visit "*Eastern Water Resources Development and Management Company*", Rayong

17:00 Arrival and check-in at Novotel Rim Pae Resort, Rayong

18:30 Dinner (hosted by KIGAM, Korea)

Day 3: 30 November 2007 (Friday)

08:30-09:00 Registration

09:00-09:45 Opening Ceremony:

Welcome speech by **Mr. Niran Chaimanee**, Geo-Environment Sector Manager on behalf of Dr. Hee-Young Chun, Director of CCOP Technical Secretariat

Opening address by Mr. Satien Sukontapongpow, Deputy Permanent Representative of Thailand to CCOP, Deputy Director-General, Department of Mineral Resources (DMR)

Group photo Session

09:45-10:00 Coffee/tea Break

10:00-11:00 Introduction, update on Groundwater Project activities by *Groundwater Project Leader*,

Dr. Atsunao Marui

Sub Project Presentations:

Groundwater Environment and Management in the Urban Coastal area by JAPAN
country leader

11:00-12:00 Groundwater Evaluation Using Monitoring System by KOREA country leader

12:00-13:00 Lunch

13:00-14:00 Groundwater and Land Subsidence Monitoring by CHINA country leader

14:00-17:00 Summary of the meeting and open discussion for next stage of Groundwater Project.

CCOP Member Countries Presentation; the proposal for Groundwater Case Study
of own country (15:00-15:10 Coffee/tea Break)

19:00 Dinner (hosted by GSJ/AIST, Japan)

Day 4: 1 December 2007 (Saturday)

09:00 Check-out&Assemble at hotel's lobby / Departure from Rayong to Bangkok

Sightseeing and agreements of Minutes

11:00 Visit "*Panya Consultant Company*", Rayong

12:00 Lunch

17:00 Arrival and check-in at Fraser Place Urbana Langsuan Hotel, Bangkok

Day 5: 2 December 2007 (Sunday)

Check-out and departure of all participants from Thailand

Outcomes

The main outcomes of the Meeting were:

- The participants of the Meeting were updated on Groundwater Project activities with interim results of sub-projects reported by leading countries Japan, China, Korea;
- The participants of the Meeting were updated with some ground water issues in Cambodia, Indonesia, Malaysia, Papua New Guinea, Philippines, Thailand and Vietnam and also were acquainted with some proposals of these countries;
- The excursion help participants to be familiar with water supply and transmission issues of East Coast of Thailand and the preliminary outcomes of the pilot project on water injection and storage implemented by Panya Consultant Co. in Rayong, Thailand;
- The Meeting agreed that three interim reports will be published from GSJ/AIST as a technical report, the draft final report of three sub-projects will be ready in the end of 2008, and the project will have the final meeting in fall of 2008;
- Regarding discussions about next stage of the project, following were important outcomes:
 - o The meeting shown that "Land subsidence" and "Groundwater analysis" are still the key issues the CCOP Member Countries need to address;
 - o Participants agreed on keeping the contact and discussions through email about the next stage project;
 - o The proposals by Japan on "Evaluation of Groundwater Volume along Asian Coastlines" and by Korea about "Advanced Problem Solving & Standardization In Groundwater Resources Of CCOP Member Countries" are of strong interests that should be taken in the future discussions for the next step;

APPENDIX 1

**WELCOME SPEECH OF CCOP TECHNICAL SECRETARIAT
MR. NIRAN CHAIMANEE (GEO-ENVIRONMENT SECTOR MANAGER)
on behalf of
DR. HEE-YOUNG CHUN (DIRECTOR)**

**At the opening of CCOP-GSJ/AIST
Meeting on Groundwater Project in 2007
30 November – 1 December 2007, Rayong, Thailand**

MR. SATIEN SUKONTAPONGPOW, Deputy Permanent Representative of Thailand to CCOP, Deputy Director-General, Department of Mineral Resources (DMR)

DR. ATSUNAO MARUI, Groundwater Project Leader, Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology (AIST)

Distinguished delegates
Ladies and Gentlemen,

Good Morning and Sawasdee Krab!!!!

First of all, on behalf of CCOP, I would like to extend a very warm welcome to **MR. SATIEN SUKONTAPONGPOW**, Deputy Director-General, Department of Mineral Resources and to thank him for taking his valuable time, despite his heavy work schedule and many commitments, to be here with us in this morning's opening session for the CCOP-GSJ/AIST Meeting on Groundwater Project in 2007 in Rayong, Thailand and do us the honor of officiating the ceremony and to deliver the opening speech.

And I would also like to warmly welcome all the resource persons, and CCOP Member Countries' experts and participants to this Meeting.

As you are probably aware, the Groundwater Project is being implemented in the latest stage under 3 sub-projects;

- 1) Groundwater Environment and Management in the Urban Coastal Area
- 2) Groundwater and Land Subsidence Monitoring
- 3) Groundwater Evaluation Using Monitoring System

Many of you who are here today have taken part in the previous three activities under the Groundwater project: **first**, the kick-off meeting held on 1-2 March 2005 in Bangkok, **second**, the Training Programme held on 31 October to 4 November 2005 also in Bangkok and lastly, the Training on Groundwater Project held on 25 to 27 September 2006 in Beijing, China.

During the kick-off meeting, the implementation planning for the project for the next 3 years was carried out by Member Countries' scientists with project experts from Japan, China and Korea. **In the second meeting and training programme**, many important topics in

groundwater, including groundwater resources, groundwater quality, effects and impacts of groundwater use, as well as the monitoring, simulation and mapping of groundwater aquifers were covered. **For the third meeting and training programme**, we have learnt the Acquisition and Analyze of Field Data for Construction of Groundwater Database, Modeling of Groundwater Flow and Pollution, Groundwater Quality Management and Pollution Remediation, Establishing a Standard Methodology for Development of Groundwater Flow Models, these topics were excellent presenting by the experts from China, Japan, and Korea.

For this Groundwater Meeting in 2007, I am pleased to say that it is a good opportunity to see that the experts of Japan, China and Korea will present their research results under the 3 sub-projects.

Furthermore, we will have the opportunity to learn about the country status on these groundwater issues and you will have an opportunity to propose and discuss for the next stage of Integrated Ground Water and Geothermal Project.

Ladies and gentlemen, before I conclude, it is refreshing to see that many of you who are here today have already taken part in the previous three gatherings and to see the experts involved to this Groundwater Meeting.

I would like to take this opportunity to thank GSJ/AIST for the support of CCOP activities, particularly in sharing of its Staff's expertise, giving their valuable time, putting in the hard work and resources. Special thanks also go to Marui San and his team members from GSJ/AIST for their efforts to this project and thanks to colleagues from CCOP Technical Secretariat for their hard work, and smooth arrangement for this Meeting.

We also like to thank Member Countries for their support of the project and to the participants for coming to this Meeting to share your experience and expert knowledge of groundwater in your country.

Finally, I would like once again to thank Mr Satien for joining us this morning in this opening session.

I wish you a successful and fruitful meeting and a pleasant stay in Thailand.

Thank you!!!!

APPENDIX 2

Opening Address
by
Mr. Satien Sukontapongpow
Deputy Permanent Representative of Thailand to CCOP
Deputy Director-General, Department of Mineral Resources
At the Opening Ceremony of the
“CCOP-GSJ/AIST Meeting on Groundwater Project in 2007”
Novotel Rim Pae Resort, Rayong
30 November – 1 December 2007

- K.Niran Chaimanee, CCOP Technical Secretariat
- Dr. Atsunao Marui, GSJ/AIST
- Distinguished experts, participants and guests,
- Ladies and gentlemen

Swaddee Khrab - Good Morning

First of all, I would like to convey the apology of Mr. Apichai Chvajareernpun, Permanent Representative of Thailand to CCOP, Director-General, Department of Mineral Resources for his inability to join us today due to his urgent mission in the northeast of Thailand.

On behalf of the host country, I would like to extend our warmest welcome to all of you to the “CCOP-GSJ/AIST Meeting on Groundwater Project in 2007” with the theme “Groundwater Assessment and Control on the CCOP Region” here in Rayong - the beautiful beaches city of Thailand where there are three distinct attractions, firstly white sand beach on the mainland and islands. Secondary, it has a variety of fresh seafood. Lastly, regional fruits such as durians, rambutans, mangosteens and pineapples. I hope you have been enjoying your stay so far.

This meeting is one another important event for the geoscientists, especially the hydrogeologists, from the CCOP Member Countries to meet to discuss, share knowledge and experience in the groundwater field through this groundwater project.

Groundwater is an important geological resource. It is somehow a scarce resource and needs to be managed. Inadequate control of the use of groundwater may lead to shortage of the resource or severely environmental impact. The capacity building programme for groundwater geoscientists is an important mean to support the sustainable management of our groundwater resource. I am very pleased to have learned of the well progress of this useful CCOP project.

I hope that the meeting will attain its objectives. All groundwater sub-project leaders will provide useful research results and the meeting will openly share ideas and discuss on the next stage of Integrated Groundwater and Geothermal project.

I hope that the future project will continue to promote a better understanding of groundwater and geothermal knowledge that can lead to efficient management for






sustainable development of the groundwater and geothermal resources in our CCOP region.





On behalf of the meeting, I would like to thank the Geological Survey of Japan / National Institute of Advanced Industrial Science and Technology for the support of this project. In addition, I would like express my sincere thanks to all resource persons who are the project leader and sub-project leaders from Japan, Korea and China for invaluable contributions to the project. Thanks are due to the CCOP Technical Secretariat for good collaboration and coordination in organizing this meeting. And thanks are also extended to all participants attending this meeting which have made this meeting a success.





Finally, I wish you all a fruitful and successful meeting and I hereby declare the "CCOP-GSJ/AIST Meeting on Groundwater Project in 2007" open.





Thank you.
Swaddee Khrab.

APPENDIX 3. List of Participants

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|---|---|
| CCOP-GSJ/AIST Meeting on Groundwater Project in 2007 30 November – 1 December 2007, Rayong, Thailand | |
| DISTINGUISHED GUEST | |
| NAME | POSITION / ADDRESS |
| 1) MR. SATIEN SUKONTAPONGPOW  | Deputy Permanent Representative of Thailand to CCOP Deputy Director-General, Department of Mineral Resources (DMR), Ministry of Natural Resources and Environment Rama VI Road, Ratchathewe Bangkok 10400, Thailand Tel: (66) 02 6219506, Fax: (66) 02 644 4892 E-mail: satiensukon@mail.com Website: http://www.dmr.go.th |
| LIST OF PARTICIPANTS | |
| NAME | POSITION / ADDRESS |
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| 1) MR. SOPHEAKTRA MAK  | Deputy Director General Department of Mineral Resources, Ministry of Industry, Mines and Energy # 45, Preah Norodom Boulevard, Khan Daun Penh, Phnom Penh, Cambodia Tel/Fax: (855) 23218510, 12331009 E-mail: gdmr@online.com.kh |
| 2) MR. TOUCH MENGLAY  | Chief of Data Management Office Department of Mineral Resource, Ministry of Industry, Mines and Energy # 45, Preah Norodom Boulevard, Khan Daun Penh, Phnom Penh, Cambodia Tel/Fax: (855) 23210811, 11922388 E-mail: gdmr@online.com.kh , touchmenglay@yahoo.com |

| NAME | POSITION / ADDRESS |
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| CHINA | |
| <p>3) PROF. DR. HE QINGCHENG</p>  | <p>Chief Hydrogeologist and Professor China Institute for Geo-Environmental Monitoring No.20, Dahuisi 20, Haidian District, Beijing 100081, China Tel: +86-10-62171221, Fax: +86-10-62173426 E-mail: heqc@mail.cigem.gov.cn, heqc@public.bta.net.cn</p> |
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| INDONESIA | |
| <p>5) MR. HARYADI TIRTOMIHARDJO</p>  | <p>Scientific Board (Hydrogeology) Environmental Geology Center Geological Agency Ministry of Energy and Mineral Resources (MEMR) Jl. Diponegoro no. 57, Bandung, Indonesia Tel. (62-22) 7274677, Fax: (62-22) 7206167 E-mail: haryadi@dgtl.esdm.go.id</p> |
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| NAME | POSITION / ADDRESS |
| JAPAN | |





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|---|--|
| <p>7) DR. ATSUNAO MARUI</p>  | <p>CCOP Groundwater Project Leader Group Leader at Geo-Barrier Research Group Geological Survey of Japan National Institute of Advanced Industrial Science and Technology (AIST), Cyuoh # 7, 1-1-1 Higashi, Tsukuba, Ibaraki, 305-8567, Japan Tel: (81-29) 861 3684, Mobile: (81-29) 861 2382 Fax: (81-29) 861 3684 E-mail: marui.01@aist.go.jp</p> |
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| <p>10) DR. JOO SUNG AHN</p>  | <p>Senior Researcher Groundwater & Geothermal Resources Division Korea Institute of Geoscience and Mineral Resources (KIGAM) 30 Gajeong-dong, Yuseong-gu, Daejeon 305-350, Korea Tel 82-42-868-3227, Fax 82-42-868-3414 E-mail: jsahn@kigam.re.kr, jsahn@rock25t.kigam.re.kr</p> |
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| MALAYSIA | |
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| PAPUA NEW GUINEA | |
| <p>14) MR. SIMON STANLY EGARA</p>  | <p>Senior Hydrogeologist Geological Survey Division, Mineral Resources Authority Mining Haus, Poreporena Freeway, P.O. Box. 1906, Port Moresby, National Capital District Papua New Guinea Tel: (675) 3213511, Fax: (675) 3210443 E-mail: segara@mra.gov.pg</p> |
| NAME | POSITION / ADDRESS |
| PHILIPPINES | |
| <p>15) MR. EFREN S. PENAFLOR</p> | <p>OIC, Chief-Geologist</p> |

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| 16) MR. ABRAHAM JOSEPH RAYMUND REYES LUCERO JR.  | | Senior Science Research Specialist/Geologist Mines and Geosciences Bureau (MGB) – Region VII Department of Environment and Natural Resources (DENR) Greenplains Subdivision, Banilad, Mandaue City, Cebu, Philippines Tel: (632) 3461689 Fax: (632) 3469176 E-mail: junrlucero@yahoo.com |
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| 17) MR. WORAWOOT TANTIWANIT (OWN COST)  | | Consulting Expert in Geological Resource Management Department of Mineral Resources (DMR) Ministry of Natural Resources and Environment 75/10 Rama VI Road, Ratchathewe Bangkok 10400, Thailand Tel: (662) 6219517, Fax: (662) 6219514 E-mail: worawoot@dmr.go.th ; w_tantiwanit@yahoo.com |
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| NAME | POSITION / ADDRESS | |
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| VIETNAM | | |
| <p>25) MR. NGUYEN BACH THANG</p>  | | <p>Deputy Director of Sub-Division, Project Manager Central Vietnam Hydrogeological and Engineering Geological Division Vinh Hai Ward, Nha Trang, Vietnam Tel: (84 059) 827655, Fax: (84 059) 824278 E-mail: bachthangtn@yahoo.com</p> |
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| <p>3) MS. PEERADA SRISOMBOON</p>  | | <p>Assistant to Technical Division E-mail: ann@ccop.or.th</p> |
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APPENDIX 4



The Minutes of CCOP-GSJ/AIST Meeting on Groundwater Project 30 November – 1 December 2007, Rayong, Thailand

The excursion before the meeting was held on 29th November 2007 (Thursday). Participants visited Groundwater Management of East Water Company which showed the management system of water supply to the eastern part of Thailand, on the way from Bangkok to Rayong where we had meeting.

The Meeting was officially opened by Mr. Niran Chaimanee, Geo-Environment Sector Manager on behalf of Dr. Hee-Young Chun, Director of CCOP Technical Secretariat, on 30th November 2007 (Friday). The Deputy Permanent Representative of Thailand to CCOP, Deputy Director-General, Department of the Mineral Resources (DMR), Mr. Satien Sukontapongpow also gave the opening address of the meeting.

Dr. Atsunao Marui from Geological Survey of Japan, AIST made a presentation for the introduction of update on Groundwater Project activities as a Groundwater Project Leader. And also indicate the target and schedule of this meeting.

Mr. Narimitsu Ito from Geological Survey of Japan, AIST made a presentation about the interim results of the sub-group of “Groundwater Environment and Management in the Urban Coastal area”, and showed the policy of final report writing.

Dr. Joo Sung Ahn from KIGAM, Korea made a presentation of the interim reports for “Groundwater Evaluation Using Monitoring System”, and also showed a plan to complete the sub-group project.

Prof. Dr. He Qingcheng from China institute for Geo-Monitoring presented the interim results and final view of the sub-group project “Groundwater and Land Subsidence Monitoring”.

These three interim reports will be published from GSJ/AIST as a technical report including the past meeting records.

The CCOP member presentation “the proposal for Groundwater Case Study of own country” was held by member countries as follows:

Mr. Wahyudin from MEMR Indonesia about “Groundwater flow system of the Lombok Island estimated from groundwater temperature, chemical composition and stable

isotope”

Mr. Simon Stanly Egara from Geological Survey, Mineral Resources Division of PNG

Mr. Abraham R. Lucero Jr. from Mines and Geosciences Bureau of Philippines about

“Hydrogeochemical studies of the aquifer in an emerging industrial zone and urbanized areas in the Philippines”

Dr. Oranuj Lorphensri from DGR, Thailand about “Groundwater monitoring and Land subsidence in Bangkok area”

Mr. Nguyen Duy Dung from DGMV, Vietnam about “Groundwater monitoring in central highland area”

Mr Wan Saifulbahri Bin Wan Mohammad from Minerals and Geoscience Department of Malaysia about “The potential environmental impacts of groundwater abstraction in North Kelantan, Malaysia”

Dr. Nguyen Hong Minh from CCOP Technical Secretariat reported the last JICA symposium

Participants confirmed that “Land subsidence” and “Groundwater analysis” are the keywords to make an international project (combined project between member countries) on the next stage.

The meeting moved into the final session that is international project proposal.

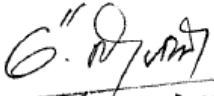
Dr. Byoung-Woo Yum mentioned the policy of the next stage project, including responsibility to the member and supporting countries.

Mr. Narimitsu Ito also made a proposal about the mapping of groundwater resources (Submarine GW Discharge) in the coast area of CCOP countries.

Dr. Atsunao Marui gave an idea to make a structure of the project including the selection of leader country, and participants agreed with the outline and keeping the contact and discussions through internet about the next stage project. It was also confirmed that three sub-group leaders make a draft of the final report in the end of 2008, and the project will have the final meeting in fall of 2008.


On 1st December 2007 (Saturday), the member leave the Hotel in Rayong, All participants visited “Panya Consultant Company” on the way back to Bangkok.

This minutes is adopted as signed:



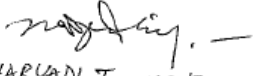
MARK SOPHEAKTRA

1. Dec. 07
Cambodia



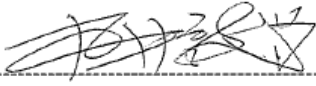
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HARYADI T. 1/12/2007

Indonesia

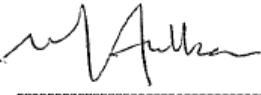


Japan




BYOUNG-WOO YUM

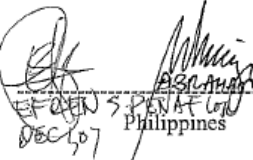
1, Dec. 2007
Korea



Malaysia (WAN SAIFULBAHRI)
WAN MUHAMMAD
1/12/07




Papua New Guinea
(Simon Egara) 1/12/07




ASLAM LUCE

12/01/07
Philippines



Thailand (Mr. Adisai Chamthi)
1/12/07



(Mr. Nguyen Duy Dung)

Vietnam
01. 12. 2007