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Proceedings Content

The collection of proceedings presented at the 7th PIT PAAI event covers topics related to Hydrogeology, climate change and urbanization impact to tropical coastal aquifers, Water resource management in coastal regions, Sustainable practices, policies and finance for water resilience in the coastal regions, Environmental hydrogeology in various geological settings, Groundwater-surface water interaction, Groundwater quality and pollution, Groundwater management in infrastructure project and geotechnical issues, Groundwater and drought, Research and case studies of groundwater in urban areas, extractive industries (mining, oil and gas, other industries), conservation measures, Advanced technology on hydrogeology, and Remote sensing and artificial intelligence application on hydrogeology.

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PREFACE

Coastal regions, home to nearly 40% of the global population, face growing environmental pressures. In the Asia–Pacific, the combined effects of climate change and rapid urbanization manifest through sea-level rise, altered precipitation patterns, intensified storm events, and other anthropogenic impacts. These stressors exacerbate challenges to freshwater security, complicating efforts to achieve the Sustainable Development Goals, particularly those related to clean water and sanitation, as groundwater salinization, over-extraction, and contamination become increasingly critical.

To address these concerns, the Asia-Pacific Coastal Aquifer Management Meeting (APCAMM) and the Perhimpunan Ahli Airtanah Indonesia/ Indonesian Groundwater Experts (PAAI) convened a joint conference in Bandung, Indonesia, from 4–7 August 2025, under the theme “*Resilient Coastal Aquifer Management in Tropical Regions: Adapting to Climate Change and Urbanization*”. The event marks PAAI’s 30th anniversary, celebrating three decades of advancing groundwater science, policy, and practice. Since its establishment in 1995, PAAI has served as a vital platform linking academia, government, industry, and civil society in pursuit of sustainable groundwater management. Hosting the 8th APCAMM continues a legacy of regional collaboration that began in Bangkok (2009) and has since progressed through Jeju (2011), Beijing (2013), Cairns (2016), Da Nang (2017), Chennai (2019), and Kuala Lumpur (2023). The 2025 meeting reaffirms PAAI-APCAMM commitment to cooperative, science-based approaches for groundwater sustainability across the Asia–Pacific region.

The conference brought together approximately 150 participants from 41 institutions, including 97 oral and 10 poster presenters. Representatives from 10 countries – Vietnam, Hongkong, Malaysia, Australia, Brunei Darussalam, China, the Netherlands, Saudi Arabia, South Korea, and Indonesia – actively contributed to the program. Although not all participants submitted manuscripts for inclusion in these proceedings, their engagement and exchange of ideas substantially enriched the scientific dialogue and collaborative spirit of the meeting.

We extend our sincere appreciation to the Scientific Committee of APCAMM, all institutional partners and sponsors for their invaluable collaboration. Our gratitude also goes to all authors and participants whose contribution enrich these proceedings. We hope that the insights shared through this conference will inspire continued cooperation and actionable solutions across the Asia Pacific Region.

Irwan Iskandar Ph.D.
Chairman, *Perhimpunan Ahli Airtanah Indonesia (PAAI)*
Bandung, Indonesia
October 2025

Preface from the Organizing Committee

The joint conference of the 8th Asia-Pacific Coastal Aquifer Management Meeting (APCAMM) and the 30th Anniversary of the Perhimpunan Ahli Airtanah Indonesia (PAAI) was held in Bandung, Indonesia, from 4–7 August 2025, under the theme “*Resilient Coastal Aquifer Management in Tropical Regions: Adapting to Climate Change and Urbanization*.” The conference was attended by approximately 150 participants from 41 institutions across 10 countries, with 97 oral presentations and 10 poster presentations. Participants represented academia, government agencies, research institutions, and industry, reflecting a broad spectrum of expertise.

The scientific program featured two panel discussions, eight technical sessions, one poster session, and one field excursion to the North Jakarta Coastal Area. Distinguished speakers from Indonesia, Australia, Hongkong, South Korea provided regional perspectives on climate adaptation and groundwater resilience, and groundwater management in the Asia Pacific. Discussions throughout the meeting underscored the urgent need for integrated groundwater management frameworks and transboundary data sharing to enhance regional resilience. The conference successfully strengthened regional cooperation, with renewed commitments to sustain the APCAMM knowledge-sharing network and to pursue joint research initiatives among participating institutions.

The Organizing Committee extends its sincere appreciation to the APCAMM Scientific Committee, supporting institutions, and co-hosts—Bandung Insitute of Technology (ITB), Padjadjaran University (UNPAD), *Badan Geologi*/Geological Agency, *Balai Konservasi Air Tanah*/The Groundwater Conservation Center (BKAT), *Badan Riset dan Inovasi Nasional*/National Research and Innovation Agency (BRIN), *Kementerian Energi dan Sumber Daya Mineral*/The Ministry of Energy and Mineral Resources (ESDM), and *Kementerian Pekerjaan Umum*/The Ministry of Public Works (PU) — as well as to all sponsors for their generous support. Special acknowledgement is also given to the PAAI Secretariat and the voluntary organizing teams from ITB and UNPAD for their dedicated coordination and outstanding contributions to the success of this event.

The meeting reaffirmed the shared commitment of groundwater professionals across the Asia–Pacific region to evidence-based and collaborative approaches. Participants expressed strong interest in continuing the dialogue at the next APCAMM meeting, building upon the progress achieved in Bandung. These proceedings serve as the official scientific record of the joint PAAI–APCAMM 2025 Conference and are intended to be a valuable reference for researchers, practitioners, and policymakers engaged in sustainable groundwater management. The Organizing Committee extends its sincere gratitude to all contributors, participants, and partners for their active engagement.

Dr. Dwi Sarah

Chairperson of the organizing committee
Joint PAAI-APCAMM 2025 Conference
Bandung, Indonesia
October 2025

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