

# FINAL ISMAR12 SYMOSIUM PROGRAMME

## From Theory To Implementation And Operation

The following programme is final. The organizer reserves the right to make adaptations onsite if deemed necessary.

Symposium Hotel: Protea Hotel Stellenbosch and Conference Centre

Address: Techno Ave, Techno Park, Stellenbosch

<https://maps.app.goo.gl/Rwo216k3Gz82Ae7dA>

The pre-symposium workshops and the symposium three day programme takes place at the hotel.

MONDAY 28 April 2025	
<b>Venue 1</b>	<b>Workshop 1: Achieving Successful Groundwater Recharge and Recovery Through Wells - David Pyne</b>
08:30 - 10:30	Workshop
10:30 - 11:00	<b>COMFORT BREAK</b>
11:00 - 13:00	Workshop
13:00 - 14:00	<b>LUNCH</b>
<b>Venue 1</b>	<b>Workshop 2: Technical solutions for IWRM by means of MAR schemes - Enrique Fernández Escalante</b>
14:00 - 16:00	Workshop
16:00 - 16:30	<b>COMFORT BREAK</b>
16:30 - 18:00	Workshop
<b>Venue 2</b>	<b>Workshop 3: Hydrogeochemistry and Managed Aquifer Recharge (MAR) - Speciation Modelling of Mixing Waters - Corné Engelbrecht</b>
08:30 - 10:30	Workshop
10:30 - 11:00	<b>COMFORT BREAK</b>
11:00 - 13:00	Workshop
13:00 - 14:00	<b>LUNCH</b>
<b>Venue 2</b>	<b>Workshop 4: MAR Scheme Design Considerations for Bore Recharge (Science meets Engineering) - Russell Martin</b>
14:00 - 16:00	Workshop
16:00 - 16:30	<b>COMFORT BREAK</b>
16:30 - 18:00	Workshop
18:00 - 19:30	Welcome Cocktail – Protea Hotel Stellenbosch

Lunch is included for all workshop participants taking place both in the morning and the afternoon.

**TUESDAY 29 APRIL 2025**

Plenary	Opening Session
8:30 - 8:45	<b>F Fourie, ISMAR12 Local Organising Committee: Welcome and Introduction to ISMAR12</b>
8:45 - 9:25	Opening Address:  IAH-SA (Kevin Pietersen), IAH-MAR (Commission - Co Chair) and IAH (Vice President: Sub-Saharan Africa - Seifu Kebede Gurmesssa)
09:30 - 10:00	<b>Adam Hutchinson, Keynote speaker: Managed Aquifer Recharge: Restoring Our Connection to Water and to Ourselves.</b>
10:00 - 10:30	<b>Ricky Murray, Keynote speaker: an overview of MAR in Southern Africa – lessons learnt</b>
10:30 - 11:00	<b>COMFORT BREAK</b>
<b>Parallel 1</b>	<b>MAR for water supply purposes - Domestic/Municipal, Agricultural and Mining</b> <b>Session chairs: Fanus Fourie &amp; Amy Allwright</b>
11:00 - 11:15	<b>77. D. McGibbon,</b> K. Riemann, K. Woolf, D. Allpass, and P. Marais: <i>Cape Flats Aquifer Management Scheme - Benefits of MAR for making the City of Cape Town a more resilient city (South Africa).</i>
11:15 - 11:30	<b>132. D. Gonzalez,</b> J. Guillaume, L. Peeters, P. Wyrwoll, J. Vanderzalm, and D. Page: <i>A Framework for Estimating Costs of Managed Aquifer Recharge for Different Scales and Conditions under Uncertainty.</i>
11:30 - 11:45	<b>76. J. Prinsloo,</b> K. Riemann, and D. Allpass: <i>Refurbishment of the Atlantis Water Resource Management Scheme - benefits of MAR in improving water supply resilience.</i>
11:45 - 12:00	<b>64. S. Belser,</b> and D Pyne: <i>Aquifer Storage and Recovery (ASR) Well Design in Salt-water Intruding Coastal Aquifers - a case study.</i>
12:00 - 12:15	<b>20. B. De La Loma González,</b> S. Espinosa, M. Minoves, and M. Ganzer: <i>Reclaimed Water for Managed Aquifer Recharge: A tool for water security in Barcelona.</i>
12:15 - 12:30	<b>148. N. Vermaak,</b> S.A. (Fanus) Fourie, E. Lukas, A. Lukas, and G. Tredoux : <i>The Impact of MAR and Recovery on the Langebaan Road Aquifer Unit, Western Cape, South Africa.</i>
12:30 - 12:45	<b>14. J. De Beer:</b> <i>MAR Development Using Infiltration Ponds in River Beds for Water Supply and Drought Relief to a Drought Prone Area.</i>
12:45 - 13:00	<b>107. D. Mulder:</b> <i>Managing Aquifer Sustainability through Resource Protection Zones: Application of fundamental hydrogeological principles for assessing the viability of Managed Aquifer Recharge (MAR) for a small town's water supply scheme</i>

13:00 - 14:00	<b>LUNCH</b>
<b>Parallel 1</b>	<b>Panel Discussion: MAR in Africa SADC-GMI</b>
14:00 - 16:00	Panel discussion
16:00 - 16:30	<b>COMFORT BREAK</b>
16:00 - 17:00	Poster Session in the exhibition venue
17:00 - 18:00	<b>WATER TASTING</b>

**TUESDAY 29 APRIL 2025**

<b>Parallel 2</b>	<b>MAR Methods and technologies</b> <b>Session Chairs: Kes Murray &amp; Danita Hohne</b>
11:00 - 11:15	<b>1. N. Hartog</b> , G. Schout, S. Beernink, and L. Brokx: <i>Overlooked: Non-uniform flow distribution across wellscreens for ASR of fresh water in saline aquifers.</i>
11:15 - 11:30	<b>32. Q. Hull</b> , M. Milczarek, and J. Keller: <i>A framework for estimating costs of Managed Aquifer Recharge for different scales and conditions under uncertainty.</i>
11:30 - 11:45	<b>119. E. Fernández Escalante</b> : <i>Hydrogeological Studies to Determine a MAR Site Feasibility, Pragmatic Approach: Example for Santiuste Basin MAR site, Central Spain.</i>
11:45 - 12:00	<b>11. N. Sharma</b> , M.F. Alam, P. Pavelic, and A. Sikka: <i>Evaluating the Efficiency of Managed Aquifer Recharge Interventions in the Ganges Basin, India.</i>
12:00 - 12:15	<b>25. P. A. M. Doulikom</b> , M. Koïta, Y. Rossier, J.M. Vouillamoz, C.A. Biau, F. Lawson, M.B. Kafando, O.R. Yonaba, and L.A. Mounirou: <i>Design and Implementation of High-potential MAR System</i>
12:15 - 12:30	<b>74. K. Woolf</b> , D. MiGibbon, K. Riemann, and D. Allpass: <i>MAR in the Cape Flats Aquifer: A case study on injection methods and borehole design.</i>
12:30 - 12:45	<b>114. S. Kreipl</b> , A. van Doorn, H. Merton, M.M.A. Groen, M. Bakker, and B.M. van Breukelen: <i>Utilizing Horizontal Wells for Aquifer Storage and Recovery: lessons from a pilot study on Texel Island, the Netherlands.</i>
12:45 - 13:00	<b>86. A. Hutchinson</b> , M. Becker and P. O'Connell: <i>Mounded or Clogged? Using fiber optic distributed temperature sensing to diagnose and monitor basin behavior.</i>
13:00 - 14:00	<b>LUNCH</b>
<b>Parallel 2</b>	<b>MAR Methods and technologies</b> <b>Session Chairs: Ricky Murray &amp; Awodwa Magingi</b>
14:00 - 14:15	<b>70. T. Dorsch</b> , M. Hussein, and M. Al Dajani: <i>Key aspects of the Management of One of the Largest ASR Systems in the World.</i>

14:15 - 14:30	<b>137. M. van der Schyff</b> , T. Kanyerere, and S. Clarke: <i>Field Pilot Study on Enhancing MAR: evaluating activated charcoal's effectiveness for water quality in Atlantis.</i>
14:30 - 14:45	<b>118. E. Fernández Escalante</b> , S. Fernández Cordero, and N. Crespo Arribas: <i>Checking 20 Infiltration Methods to Determine an Accuracy Ranking Using a Digital Twin, Santiuste Basin, Los Arenales Living Lab, Spain</i>
14:45 - 15:00	<b>105. R. Glaude</b> , N. Simon, and S. Brouyère: <i>Quantifying Infiltration Rates within a Managed Aquifer Recharge Pilot Site using Distributed Temperature Sensing Technology.</i>
15:00 - 15:15	<b>2. N. Hartog</b> , G. Schout, and T. Sweijen: <i>Aquifer Storage and Recovery: Design considerations from science to practice.</i>
15:15 - 15:30	<b>78. S. Martos-Rosillo</b> , N. N. Fernández, J. Jódar, and C. Marín-Lachado: <i>Ancestral Nature-based Solutions for Managed Aquifer Recharge in Spain.</i>
15:30 - 15:45	<b>91. S. Sasidharan</b> , R. Goncalves de Souza Gomes, S. Kumar, E.J. Bertrand, B.S. Bracamontes, and T.T.M.E. Silva: <i>Multibeneficial Managed Aquifer Recharge: Integrating advanced monitoring and novel source water for groundwater sustainability.</i>
15:45 - 16:00	<b>104. R. Glaude</b> , S. Brouyère, S. Lacorte, A. Jurado, and E. Pujades: <i>Batch Experimenta: a tool to evaluate the fate of organic contaminants in MAR prefeasibility studies.</i>
16:00 - 16:30	<b>COMFORT BREAK</b>
16:00 - 17:00	Poster Session in the exhibition venue
17:00 - 18:00	<b>WATER TASTING</b>
<b>TUESDAY 29 APRIL 2025</b>	
<b>Parallel 3</b>	<b>Workshop: Integrated strategies in design of new MAR schemes to minimise clogging</b> - Declan Page
11:00 - 13:00	<b>Workshop</b>
13:00 - 14:00	<b>LUNCH</b>
<b>Parallel 3</b>	<b>Workshop: Part 1: Overview of American Society of Engineers (ASCE) Standard Guidelines for Managed Aquifer Recharge Surface Spreading Facilities (ASCE/EWRI 69-19): Managed Aquifer Recharge Concepts and Planning</b> - Adam Hutchinson and Mike Milczarek
14:00 - 16:00	<b>Workshop</b>
16:00 - 16:30	<b>COMFORT BREAK</b>
16:00 - 17:00	Poster Session in the exhibition venue
17:00 - 18:00	<b>WATER TASTING</b>

WEDNESDAY 30 April 2025	
<b>Parallel 4</b>	<b>MAR in relation to environmental, sustainability and climate change adaptation</b> <b>Session Chairs:</b> Kornelius Riemann & Daniela Benedicto van Dalen
08:30 - 08:45	<b>164. N. Devau</b> , G. Picot-Colbeaux, A. Manlay, V. Debois, P. Goderniaux, L. Jehanno, and B. Meire: <i>Is Managed Aquifer Recharge an Option to Tackle Dysfunction in Sewer Network Induced by Groundwater Flow Infiltration on the Urban Community of Lens-liévin (Northern France)?</i>
08:45 - 09:00	<b>158. K. Murray:</b> <i>A Case Study of MAR for Sustainable Mine Water Management in Southern Africa.</i>
09:00 - 09:15	<b>120. E. Fernández Escalante</b> , J.D. Henao Casas, C. Moreno de Guerra Per, M.D. Maza Vera, and C. Moreno Valverde: <i>Unmanaged Recharge of Aquifers from Transverse Structures in Spanish River Courses: a GIS-based comparison between intentional and unintended MAR figures.</i>
09:15 - 09:30	<b>106. E. van Houtte</b> , T. Rogier, J. van Eeghem, and J. Verbauwheide: <i>Water Recycling Combined to Managed Aquifer Recharge in the Dunes: long time experience at Kiksijde (Flanders, Belgium).</i>
09:30 - 09:45	<b>66. A. González-Ramón</b> , A. Fernández-Ayuso, M. Rodríguez-Rodríguez, H. Aguilera, T. Zakaluk, N. Naranjo, C. Marín-Lechado, J. Jódar, and S. Martos-Rosillo: <i>Preliminary Hydrological Assessment of "Pesqueras" in Gredos Mountain Range (Spain) as Ancestral Artificial Recharge Systems.</i>
09:45 - 10:00	<b>100. J. Melady</b> , and R. Dougherty: <i>Managed Aquifer Recharge for Thermal Loading Mitigation and Enhancement of Instream Habitat.</i>
10:00 - 10:15	<b>18. L. R. Lazarus:</b> <i>MAR: A Vital Component in Designing Livable Urban Waterways for Environmental Restoration in Cape Town.</i>
10:15 - 10:30	<b>128. T. Mumberg</b> , L. Ahrens, P. McCleaf, and P. Wanner: <i>A Swedish Case Study on Tracing Per- and Polyfluoroalkyl Substances (PFAS) through a MAR System.</i>
10:30 - 11:00	<b>COMFORT BREAK</b>
<b>Parallel 4</b>	<b>MAR in relation to environmental, sustainability and climate change adaptation</b> <b>Session Chairs:</b> Philani Msimango & Andrew Johnstone
11:00 - 11:15	<b>30. M.B. Demlie</b> , and H. Msweli: <i>Assessing the Potential of Managed Aquifer Recharge from Treated Wastewater in the Greater Durban Metropolitan Region, South Africa.</i>
11:15 - 11:30	<b>101. V. Parry</b> , R. Schneuwly, K. Carden, H. Thouin, C.G. Bryan, N. Baran, C. Soulier, and G. Alexis: <i>Potential Bioindicators of Aquifer Health: a preliminary investigation at a Cape Flats stormwater infiltration pond.</i>

11:30 - 11:45	<b>6. T. Mathivha</b> , N. Vermaak, A. Magingi, and P.J. Oberholster: <i>Potential Ecological Impacts of Managed Aquifer Recharge on Wetlands in the Langebaan Road Aquifer Unit.</i>
11:45 - 12:00	<b>149. C. Cherubini</b> , M. Sufyan, G. Martelli, and D. Goi: <i>MAR as an Effective Climate Change Adaptation Mechanism: a case study in Friuli Venezia Giulia Region, Italy.</i>
12:00 - 12:15	<b>35. S.N. Singh</b> , V.M. Patel, and Y. Atterwala: <i>Managed Aquifer Recharge through Precast Modular Systems with High-performance Recharge Wells Using Johnson Screens and Rain Quantification Systems in Gujarat's Varied Terrain - Case studies.</i>
12:15 - 12:30	<b>157. T. Madlala</b> : <i>Isotopic Investigation of Groundwater-Surface Water Interactions in Managed Aquifer Recharge Systems: a case study of the Lower Berg River Catchment, Western Cape Province, South Africa.</i>
12:30 - 12:45	<b>111. B. Makhahlela</b> , V. Parry, R. Schneuwly, S. Fernandes, P. Msimango, K. Carden, H. Thuin, J. Harris, and C.G. Bryan: <i>Microbial Biodiversity and Geochemistry of the Atlantis MAR Site: Initial developments towards a biosurveillance toolkit.</i>
12:45 - 13:00	<b>129. N. Weisbrod</b> , T. Turkltaub, E. Bar-Zeev, and A. Furman: <i>Revisit the SAT: Can we improve its efficiency and operation?</i>
13:00 - 14:00	<b>LUNCH</b>
<b>Parallel 4</b>	<b>Panel discussion : Aquifer management, the microbiome and biosurveillance - from science to operations</b> <b>BGRM</b>
14:00 - 16:00	<b>Panel discussion</b>
16:00 - 16:30	<b>COMFORT BREAK</b>
	<b>AGM</b>
16:30 - 17:30	IAH MAR Commission Annual General Meeting
18:00 - 22:00	<b>Symposium Dinner in Stellenbosch</b>
<b>WEDNESDAY 30 April 2025</b>	
<b>Parallel 5</b>	<b>Quality and Clogging Issues: Predictions and Management in Basins and Bores</b> <b>Session Chairs:</b> Reynold Chow & Yazeed van Wyk
08:30 - 08:45	<b>156. V. Troelstra</b> , A. Störiko, and B.M. van Breukelen: <i>Pathogen Transport and Fate During Riverbank Filtration.</i>
08:45 - 09:00	<b>95. C. Engelbrecht</b> : <i>Injection Bore Clogging Prediction and Management: Case studies from Southern Africa and Australia.</i>
09:00 - 09:15	<b>31. M. Milczarek</b> : <i>Soil Aquifer Treatment, Pathogens and Organic Carbon Removal Revisited.</i>

09:15 - 09:30	<b>39. U.E. Bollmann</b> , C.N. Albers, T.M.M. Karlsson, J.H. Christensen, and A.R. Johnsen: <i>Stormwater Runoff in European Cities: Risk of urban groundwater pollution due to SUDS?</i>
09:30 - 09:45	<b>153. A. Hutchinson</b> , <i>Removal of Suspended Solids and Water Quality Improvements from Riverbed Filtration - Eight Years of Demonstration Testing in Orange County California.</i>
09:45 - 10:00	<b>145. D. Page</b> , J. Awad, J. Vanderzalm, G. Puzon, F. Mathes, M. Taylor, J.-W. Liu, G. Dojchinov, A. Warden, C. Turnadge, K. Barry, J. Wiley, R. Rojas, J. Wu, L. Ling, S. Currie, and J. Jaeger: <i>Cost Effective Clogging Management During Managed Aquifer Recharge.</i>
10:00 - 10:15	<b>124. L. Augustin</b> , and T. Baumann: <i>Monitoring Dynamics in River Water Quality and Quantity of the River Günz in Bavaria (GER).</i>
10:15 - 10:30	
10:30 - 11:00	<b>COMFORT BREAK</b>
<b>Parallel 5</b>	<b>Quality and Clogging Issues: Predictions and Management in Basins and Bores</b> <b>Session Chairs:</b> Reynold Chow & Julian Conrad
11:00 - 11:15	<b>26. D. Botha</b> , J.C. Truter, E. Bester, and G.M. Wolfaardt: <i>Engineered Fungal Biofilms in a Novel Biosensor for the Real-time Monitoring of Estrogenic Endocrine Disrupting Chemicals.</i>
11:15 - 11:30	<b>40. U.E. Bollmann</b> , T.B. Bech, N. Vermaak, A. Magingi, S. Clarke, C.K. Hansen, and J. Aamand: <i>Fate of Pathogens and Organic Micropollutants in MAR: Enhancing removal efficiency by reactive layers.</i>
11:30 - 11:45	<b>89. R. Nardacci</b> , M. Widdowson, C. Bott, C. Wilson, D. Holloway, and J. Sparks: <i>Investigating MAR Well Clogging Potential for Highly Purified Wastewater in a Deep Coastal Plain Aquifer.</i>
11:45 - 12:00	<b>131. A. Furman</b> , N. Katsevman, and N. Weisbrod: <i>Addressing the Soil Aquifer Treatment Bottleneck.</i>
12:00 - 12:15	<b>150. T. Pichler</b> , S. Koopman, and H. Prommer: <i>Molybdenum Mobility during Managed Aquifer Recharge in Carbonate Aquifers.</i>
12:15 - 12:30	<b>141. R. Martin</b> : <i>Clogging Indicators: Werribee ASR case study.</i>
12:30 - 12:45	<b>112. R. Schneuwly</b> , K. Carden, and C.T. Tanyanyiwa: <i>Natural Attenuation of Stormwater Contaminants During Infiltration and Storage in a Shallow Primary Aquifer.</i>
12:45 - 13:00	<b>60. M. Mokhehi</b> , L. Towers, A. Roychoudhury, and R. Chow: <i>Assessing the Risks of Emerging Contaminants from Treated Effluent as Source Water in Atlantis.</i>
13:00 - 14:00	<b>LUNCH</b>

<b>Parallel 5</b>	<b>MAR for water supply purposes - Domestic/Municipal, Agricultural and Mining</b> <b>Session Chairs: Kes Murray &amp; Amy Allwright</b>
14:00 - 14:15	<b>22. D. Hohne</b> , F. Fourie, P. Lourens, and S. Esterhuyse: <i>A MAR Framework in the South African Context for Fractured Rock Aquifer.</i>
14:15 - 14:30	<b>42. M. Villagrán</b> , L. Piepers, K.H. Jensen, T.O. Sonnenborg, and M. Huysmans: <i>Can a Local Solution Have a Regional Impact? Evaluating the influence of weirs in agricultural drainage ditches in Flanders, Belgium.</i>
14:30 - 14:45	<b>4. A. Magingi</b> , F. Fourie, N. Vermaak, P.J. Oberholster, and T. Mathivha: <i>Assessment of Wetlands as an Indicator for MAR site selection in Langebaan Road Aquifer.</i>
14:45 - 15:00	<b>3. E.A.J. Derks</b> , and R. Dijkma: <i>Assessing Managed Aquifer Recharge by Indigenous Communities in Mountainous Watersheds of Oaxaca, Mexico.</i>
15:00 - 15:15	<b>23. A. Ross</b> : <i>Water Banking to Increase Water Security and Resilience to Drought.</i>
15:15 - 15:30	<b>127. T. Hanna</b> : <i>Critical Aspects of Well Design for MAR.</i>
15:30 - 15:45	<b>12. D. Benedicto van Dalen</b> : <i>Infiltration Water Quality Concerns and Policy Development of ASR Systems: a comparison study of three case studies in the Netherlands.</i>
15:45 - 16:00	<b>162. S. Brouyère</b> , S. Durieux, R. Glaude, P. Orban, J.-M. Comprère, and J. Derouane: <i>Managed Aquifer Recharge in WALLonia: the MARWAL project.</i>
16:00 - 16:30	<b>COMFORT BREAK</b>
	<b>AGM</b>
16:30 - 17:30	IAH MAR Commission Annual General Meeting
18:00 - 22:00	<b>Symposium Dinner in Stellenbosch</b>
<b>WEDNESDAY 30 April 2025</b>	
<b>Parallel 6</b>	<b>Workshop: Recent advancements in MAR feasibility mapping - Catalin Stefan</b>
08:30 - 10:30	<b>Workshop</b>
10:30 - 11:00	<b>COMFORT BREAK</b>
<b>Parallel 6</b>	<b>Workshop: Part 2: American Society of Engineers (ASCE) Standard Guidelines for Managed Aquifer Recharge Surface Spreading Facilities (ASCE/EWRI 69-19): Design, O&amp;M, Data Collection and Site Characterization Methods - Adam Hutchinson and Mike Milczarek</b>
11:00 - 13:00	<b>Workshop</b>



13:00 - 14:00	<b>LUNCH</b>
<b>Parallel 6</b>	<b>MAR in relation to environmental, sustainability and climate change adaptation</b> <b>Session Chairs: John Okedi &amp; Andrew Johnstone</b>
14:00 - 14:15	<b>113. A. Gutierrez</b> , B. Mougin, J. Nicolas, V. Bault, C. Lasher-Scheepers, P. Msimango, L. Fisher-Jeffes, and A. Ncube: <i>Near Real Time Groundwater Forecast for the MAR Projects of Cape Town, South Africa.</i>
14:15 - 14:30	<b>43. C. Stefan</b> , J. Glass, A. Conrad, R. Heim, A. Chkirbene, K. Khemiri, C.F. Panagiotou, T. E. Leitão, T.N. Martins, M.M. Oliveira, M. Horovitz, K. Alpes, S. Ghannem, R. Bergillos, and J. Andreu: <i>The MAR Agreements: A new governance approach for advancing the MAR implementation.</i>
14:30 - 14:45	<b>103. R. Murray</b> , <i>Kolomela Mine - ten years of borehole injection in a shallow unconfined aquifer for surplus mine water disposal.</i>
14:45 - 15:00	<b>51. M. Camporese</b> , R. Chow, A. Furman, B. Gatto, C. Lauvernet, C. Massari, and A. Szymkiewicz: <i>Aiming at Sustainable Aquifer Recharge to Enhance Resilience of Groundwater Services under Increased Drought Risk.</i>
15:00 - 15:15	<b>143. D. Page</b> , J. Vanderzalm, K. Barry, D. Gonzalez, J. Awad, and C. Seidl: <i>Lessons from the Rise and Fall of Managed Aquifer Recharge (MAR) in Langhorne Creek Region to Manage Drought Resilience.</i>
15:15 - 15:30	<b>139. T. van Dooren</b> , K. Raat, N. Hartog, and G. Zwolsman: <i>Optimizing MAR in Coastal Dunes by Extracting Brackish Groundwater: a field pilot in the Netherlands.</i>
15:30 - 15:45	<b>117. H. Ndakola</b> , and J. Okedi: <i>Groundwater Quantity and Quality Assessment for Aquifer Recharge in Ohangwena Region, Namibia.</i>
15:45 - 16:00	<b>54. M.F. Alam</b> , M.E. McClain, A. Sikka, and S. Pande: <i>Planning Sustainable and Equitable Managed Aquifer Recharge Interventions: An agent-based socio-hydrology approach.</i>
	<b>AGM</b>
16:30 - 17:30	IAH MAR Commission Annual General Meeting
18:00 - 22:00	<b>Symposium Dinner in Stellenbosch</b>

## THURSDAY 1 May 2025

<b>Parallel 7</b>	<b>MAR for water supply purposes - Domestic/Municipal, Agricultural and Mining</b> <b>Session Chairs: Julian Conrad &amp; Nicolette Vermaak</b>
08:30 - 08:45	<b>161. A. Palma</b> , and M.I. Victor Franco: <i>Managed Aquifer Recharge Plan for Mexico City.</i>
08:45 - 09:00	<b>98. L. Speijer</b> , M. Zawadzki, M. Maertens, W. Boënne, J. Dams, and M. Huysmans: <i>Sub-irrigation as Managed Aquifer Recharge Technique: The impact on groundwater levels and flow.</i>
09:00 - 09:15	<b>125. T. Baumann</b> , and L. Augustin: <i>Coupling Stormwater Protection and Water Suppl for Hop Gardens: first results from a pilot plant.</i>
09:15 - 09:30	<b>53. S.R. Dennis</b> , A. Johnstone, J. Tanner, R. Powell, and D. Diongue: <i>Managed Aquifer Recharge from Rooftop Rainfall Collection to Ensure Sustainable Off-the-grid Groundwater Supply.</i>
09:30 - 09:45	<b>34. L. Piepers</b> , M. Villigrán, J. van Orshoven, M. Huysmans, and J. Diels: <i>Assessing the Regional Impact of Weirs in Agricultural Drainage Ditches Using a Numerical Model: A case study in northeastern Belgium.</i>
09:45 - 10:00	<b>140. S.A. (Fanus) Fourie</b> , and D. Hohne: <i>The Design and Implementation of Aquifer Recharge Enhancement Schemes in South Africa</i>
10:00 - 10:15	<b>142. J. Vanderzalm</b> and co-author D. Page, S. Priestley, A. Deslandes, H. Groves, S. Kim, and C. Seidl: <i>Upper King River Managed Aquifer Recharge (MAR).</i>
10:15 - 10:30	<b>88. M. Faneca Sanchez</b> , J. King, G.O. Essink, and M. van der Vat: <i>Conceptual Design of a MAR System for a Brackish Aquifer in the Mekong Delta, Vietnam.</i>
10:30 - 11:00	<b>COMFORT BREAK</b>
<b>Parallel 7</b>	<b>MAR for water supply purposes - Domestic/Municipal, Agricultural and Mining, etc. and Awareness, Education and training on MAR</b> <b>Session Chairs: Ricky Murray &amp; Yazeed van Wyk</b>
11:00 - 11:15	<b>28. D.L. Carnow</b> , and T.O.B. Kanyerere: <i>Using Digital Transformative Technologies to Detect, Screen and Remediate CEC's and POPS, Cape Flats Aquifer, South Africa.</i>
11:15 - 11:30	<b>58. P. Jokela</b> , J. Mäki-Torkko, and R. Rämä: <i>A 30-year-old Managed Aquifer Recharge Project for Drinking Water Production: Lessons learned.</i>
11:30 - 11:45	<b>52. M. Schirmer</b> , D. La Cecilia, and C. Moeck: <i>Large-scale and Long-term MAR Application of an Important Swiss Water Supply Company.</i>

11:45 - 12:00	<b>84. J. Okedi</b> , and K. Manoharan: <i>Building Resilience in Water Supply with Managed Aquifer Recharge with Recycled Wastewater - case of Paarl Town in South Africa.</i>
12:00 - 12:15	<b>5. R. Martin</b> , J. Frdelja, and D. Trigg: <i>Direct Harvesting of Roof Rainwater for MAR across New Urban Developments in Ballarat.</i>
12:15 - 13:00	<b>LUNCH</b>
<b>Parallel 7</b>	<b>Awareness, Education and training on MAR</b> <b>Session Chairs:</b> Kornelius Riemann & Philani Msimango
13:00 - 13:15	<b>5. D. Benedicto van Dalen</b> : <i>Oasis Flow: An assessment tool for municipal water footprint and Managed Aquifer Recharge across three European pilot sites - MARCLAIMED project.</i>
13:15 - 13:30	<b>81. P.S. Juuti</b> , R.P. Juuti , T.S. Katko, J.J. Hukka, and P. Dillon: <i>Engaging with stakeholders proved vital for uptake of Managed Aquifer Recharge in Community Water Supplies.</i>
13:30 - 13:45	<b>126. S. Hlahla</b> , A. Abrams, L. Grootboom, and K. Carden: <i>Developing a Local Implementation Guideline for Managed Aquifer Recharge in Combination with Blue-green Infrastructure.</i>
13:45 - 14:00	<b>62. E. Fernández Escalante</b> , H. Barbosa, and E. López-Gunn: <i>Co-managed Aquifer Recharge (CO-MAR): Evolution of the concept due to Spanish and Peruvian stakeholders participation.</i>
14:00 - 14:15	<b>V. Matta</b> , D. Duncan, E. Shaylor, L. Verstraete, and C. Stefan: <i>MAR in humanitarian contexts</i>
<b>Plenary</b>	<b>Closing ceremony</b> <b>Session Chair:</b> Fanus Fourie
14:15 - 14:45	<b>Closing keynote: 67. P. Dillon:</b> <i>Testing the robustness of MAR policy settings for Water Supply Security under Climate Change.</i>
14:15 - 14:45	Thank you notes and handing over to ISMAR13
<b>THURSDAY 1 May 2025</b>	
<b>Parallel 8</b>	<b>Suitability Mapping to Site Selection</b> <b>Session Chairs:</b> Danita Hohne & Daniela Benedicto van Dalen
08:30 - 08:45	<b>8. C. Stefan</b> , T. N. Martins, A. Chkirbene, K. Khemiri, C. F. Panagiotou, S. Ghannem, R. Bergillos, and G.Y. Ebrahim: <i>Guiding Principles for Geospatial MAR Feasibility Mapping.</i>
08:45 - 09:00	<b>97. A. Gutierrez</b> , J. Perrin, A Brugeron, Y. Caballero, A. Pécastaings, M. Boru, D. Deferso, N. Adela and A. Adugna: <i>Managed Aquifer Recharge Suitability Mapping in Eastern Ethiopia (Dire Dawa, Harar, Jijiga areas).</i>
09:00 - 09:15	<b>68. B. Vandala</b> , and G. Mahed: <i>Managed Aquifer Recharge Site Selection in the Nelson Mandela Bay Using Different Multi-criteria Decision Analysis Techniques.</i>

09:15 - 09:30	<b>44. T.S. Bording</b> , E.A. Auken, and P.K. Maurya: <i>Ground-based TEM for Efficient Pre-investigation of Managed Aquifer Recharge Sites.</i>
09:30 - 09:45	<b>75. P. Geldenhuys</b> , K. Riemann, J. Prinsloo, J. Weitz, E. Wise, and D. Allpass: <i>Proposed Expansion of the Atlantis Aquifer: An integrated approach combining geophysics and remote sensing investigations.</i>
09:45 - 10:00	<b>133. D. Gonzalez</b> , D. Page, and L. Peeters: <i>Managed Aquifer Recharge Opportunity Mapping in New South Wales.</i>
10:00 - 10:15	<b>37. D. Archer</b> , C.J. Truter, V. Rambau, P. Msimango, and G. Wolfaardt: <i>Exploring the Relationship between Effect-based Analysis, Emerging Pollutants, and Conventional Water Quality Parameters in a Threatened Coastal Aquifer.</i>
10:15 - 10:30	<b>115. N. Igwebuike</b> , T. Halihan, and T. Kanyerere: <i>Geophysical Applications in Managed Aquifer Recharge: insights from coastal and karst aquifer systems.</i>
10:30 - 11:00	<b>COMFORT BREAK</b>
<b>Parallel 8</b>	<b>Regulatory Lessons: Safe and Reasonable Requirements for Testing to Operating</b> <b>Session Chairs: Nicolette Vermaak &amp; Awodwa Magingi</b>
11:00 - 11:15	<b>121. E. Fernández Escalante</b> , J.D. Henao Casas, and R. Calero Gil: <i>Water Quality from Spanish Managed Aquifer Recharge (MAR) Sites to Support National-scale Guidelines Avoiding Maximun Allowable Concentrations.</i>
11:15 - 11:30	<b>63. M. Sapiano</b> , E. Fernández Escalante, C. Schutz, and O. Gaerty: <i>Governance of Managed Aquifer Recharge: Insights from the European Union's regulatory framework.</i>
11:30 - 11:45	<b>21. D. Hohne</b> , F. Fourie, P. Lourens, and S. Esterhuyse: <i>Legislative Issues in South Africa for the Implementation of MAR Schemes.</i>
11:45 - 12:00	<b>163. G. Pico-Colbeaux</b> , N. Devau, M. Pettenati, and J.-C. Maréchal: <i>MAR's Strategy Back in France Following the Latest Consecutive Droughts.</i>
12:00 - 12:15	<b>57. F. Fourie, and S. Singh</b> : <i>The Artificial Recharge Strategy of South Africa: The ongoing cycle of research, knowledge generation and implementation.</i>
12:15 - 13:00	<b>LUNCH</b>
<b>Parallel 8</b>	<b>The Economics of MAR</b> <b>Session Chairs: John Okedi &amp; Kes Murray</b>
13:00 - 13:15	<b>24. A. Ross</b> : <i>Benefits and Costs of Water Banking: An integrated water governance solution</i>
13:15 - 13:30	<b>134. C. Seidl</b> , D. Page, and S. Wheeler: <i>Managed Aquifer Recharge in Australian Water Legislation, Regulation and Policy: and anticommons problem?</i>

13:30 - 13:45	<b>92. Da. Mance</b> , B.H. Černeha, and Di. Mance: <i>Economic Institutional Mechanism Design of Managed Aquifer Recharge: Insights from the BLUE RECHARGE Project.</i>
13:45 - 14:00	<b>M. Arinaitwe</b> , and J. Okedi: <i>IOT-based Data and Analytic Hierarchy Process to Map Groundwater Recharge with Stormwater.</i>
14:00 - 14:15	<b>M.F. Alam</b> , P. Pavalic, J. Lautze, and A. Sikka: <i>Managed Aquifer Recharge to Co-manage Floods and Droughts: Transferring lessons from Asia to Africa.</i>
<b>Plenary</b>	<b>Closing ceremony</b> Session Chair: Fanus Fourie
14:15 - 14:45	<b>Closing keynote: 67. P. Dillon:</b> <i>Testing the robustness of MAR policy settings for Water Supply Security under Climate Change.</i>
14:45 - 15:15	Thank you notes and handing over to ISMAR13
<b>THURSDAY 1 May 2025</b>	
<b>Venue 3</b>	<b>Workshop Part 1: Analysis of implemented MAR scheme failure: selected global case studies - Constantin Seidl</b>
08:30 - 10:30	<b>Workshop</b>
10:30 - 11:00	<b>COMFORT BREAK</b>
<b>Venue 3</b>	<b>Workshop Part 2: Analysis of implemented MAR scheme failure: selected global case studies - Constantin Seidl</b>
11:00 - 12:15	<b>Workshop</b>
12:15 - 13:00	<b>LUNCH</b>
<b>Plenary</b>	<b>Closing ceremony</b> Session Chair: Fanus Fourie
14:15 - 14:45	<b>Closing keynote: 67. P. Dillon:</b> <i>Testing the robustness of MAR policy settings for Water Supply Security under Climate Change.</i>
14:45 - 15:15	Thank you notes and handing over to ISMAR13

## FRIDAY 2 May 2025

Field Excursions departing from the hotel. All delegates booked on the field excursions will receive the full itinerary of the excursion they selected.

Pre-booking for the excursions, when registering to attend the symposium, is essential.

Depart 08:00	<b>Field Excursion 1</b> The Atlantis Water Resource Management Scheme Field Excursion Sponsored by EDRS
Depart 08:00	<b>Field Excursion 2</b> The Cape Flats Aquifer Management Scheme
Depart 08:00	<b>Field Excursion 3</b> The Elandsfontein Phosphate Mine and Langebaan Road Aquifer MAR schemes Field Excursion Sponsored by GEOSS

**Important:** The programme may be changed by the organizers without prior notice.

## ISMAR12 SYMPOSIUM PRELIMINARY POSTER PROGRAMME

28 April to 2 May 2025

POSTER PRESENTATIONS	
Slot	Poster information
1	96. <b>J. Myburgh</b> , P. Ravenscroft, and T. Bell: <i>Implementaton of Managed Aquifer Recharge for Sustainable Municipal Water Supply, Prince Albert, South Africa</i>
2	7. <b>C.F. Panagiotou</b> , J. Glass, and C. Stefan: <i>Assessing the Impact of Managed Aquifer Recharge in Akrotiri Coastal Aquifer (Cyprus) via Groundwater Modelling</i>
3	72. <b>T. Funiselo</b> , and T. Kanyerere: <i>Investigating Groundwater Hydrodynamics of Managed Aquifer Recharge System for Improved Sustainable Groundwater Supply, Limpopo, South Africa</i>
4	50. <b>A. Nicholls</b> , <i>Interpretation of groundwater modelling scenarios for Managed Aquifer Recharge, Langebaan Road, South Africa</i>
5	90. <b>K. Nkokou</b> , L. Baloyi, and G. van Dyk: <i>Managed Aquifer Recharge (MAR) for Rural Water Supply: Groundwater mapping for Carnavon</i>
6	36. J. Clearwater, V. Cypaite, and <b>K. Daines</b> : <i>Volsung: What Can Groundwater Modelers in MAR Applications Learn from the Geothermal Energy Industry</i>
7	82. <b>T. Mabula</b> , and K. Masindi: <i>Evaluating the Hydrogeological Environment of Johannesburg and Surrounding Areas for Managed Aquifer Recharge</i>
8	47. <b>Q. Nasson</b> , and T. Kanyerere: <i>Characterizing Palaeochannel Aquifer Systems to Support Groundwater Development for Improved Augmentation of Water Supply Systems, Western Cape, South Africa</i>
9	122. <b>H.E. Mapindani</b> , and T. Kanyerere: <i>Assessment of Aquifer Performance in Remediating Groundwater Contaminants, Polokwane Managed Aquifer Recharge Scheme, South Africa</i>
10	79. <b>N. Ndema</b> , S. Clarke, and T. Hlatywayo: <i>Evaluating the Possible Microplastic Contamination in a Managed Aquifer Recharge System</i>
11	61. <b>M. Sapiano</b> , C. Schütz, E. Fernández Escalante: <i>MARSOLUT-policy-brief: Essentials on Managed Aquifer Recharge for policy makers and water managers</i>
12	85. <b>H. Barbosa</b> , H. Casas, K. Schwartz, and M. Gilek: <i>Managed Aquifer Recharge Skewed Towards Technical and Physical Models: What does it mean in practice?</i>
13	73. <b>J. Jódar</b> , T. Zakaluk, A. González, and C. Marin: <i>Medieval System of Managed Aquifer Recharge in Sloping Aquifers of Sierra Nevada (Spain)</i>
14	94. <b>Di. Mance</b> , B.H. Černah, and Da. Mance: <i>Examples of Managed Aquifer Recharge Practices on the Croatian Coast</i>
15	<b>27. K. Masindi</b> , T.M. Mabula, Z. Khuzwayo, and L.K. Motaung: <i>Assessment of Potential Managed Aquifer Recharge Sites in Johannesburg, South Africa: A GIS and remote sensing approach.</i>