The 14th National Groundwater Symposium

Since 2009

Janakpurdham, Madhesh Province, Nepal । 26 March 2026

Event Report

Challenges and Opportunities for Sustainable Development and Management of Groundwater in Nepal

Organizers

CREEW

THE SMALL EARTH NEPAL-2001

MoEIWS Madhesh Pradesh

WECS

Acknowledgements

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We look forward to continued collaboration in advancing sustainable groundwater governance in Nepal.

Organizers

Center of Research for Environment, Energy and Water (CREEW)
The Small Earth Nepal (SEN)
Kathmandu Valley Water Supply Management Board (KVSWMB)
Ministry of Energy, Irrigation and Water Supply (MoEIWS); Madhesh Province Government of Nepal

Executive Summary

The 14th National Groundwater Symposium was held on 26 March 2026 in Janakpurdham, Madhesh Province, Nepal. Organized under the theme "*Challenges and Opportunities for Sustainable Development and Management of Groundwater in Nepal,*" the event brought together 151 participants representing federal and provincial governments, municipalities, academic institutions, national and international NGOs, civil society organizations, and development partners.

Held against the backdrop of a historic drought disaster declared in Madhesh Province, the first such declaration in the province's history, the symposium was widely recognized as the most consequential gathering in the event's 17-year history. The 2026 edition deliberately shifted focus from knowledge-sharing to concrete action, accountability, and implementation of recommendations from the previous year's symposium.

Key Highlights at a Glance

- 151 participants from federal/provincial governments, municipalities, NGOs, academia, and development partners
- Historic drought context: 2025 monsoon delivered only 46% of normal rainfall; first-ever provincial drought disaster declaration
- Three keynote/context-setting presentations covering national, provincial, and development-partner dimensions
- Three technical presentations on groundwater knowledge gaps, Managed Aquifer Recharge (MAR), and governance frameworks
- Sector cluster sharing with practitioners from municipalities, water utilities, drilling industry, agriculture, and community groups
- Open multi-stakeholder discussion capturing cross-provincial perspectives and community-level priorities

The symposium concluded with strong calls for: dedicated provincial groundwater legislation; integrated database systems; nature-based recharge solutions; expedited completion of 448 pending water projects; and sustained provincial-level capacity building. A commitment to scale dialogues to district and local government levels was announced by the Ministry of Energy, Irrigation and Water Supply (MoEIWS), Madhesh Province.

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A. Introduction

1. Background

Groundwater is the largest source of liquid freshwater on Earth, representing approximately 99% of all liquid freshwater resources globally and constituting about one-third of the world's total freshwater supply[1]. This substantial reserve constitutes about one-third of the world's total freshwater (excluding ice caps and glaciers)[2]. It plays a vital role in supporting human populations and ecosystems and provides drinking water for an estimated half of the world's population, especially in rural areas lacking centralized water distribution systems[3]. Furthermore, approximately 25% of the water used for irrigation relies on groundwater sources[4]. Beyond its direct uses for human consumption and agriculture, groundwater sustains baseflow in rivers, supports vital ecosystems, and holds cultural significance for many communities worldwide. It also plays a crucial role in regulating both water quantity and quality.

Nepal has increasingly recognized the importance of groundwater resources in the context of multiple compounding stressors: climate change, accelerating urbanization, population growth, and declining surface water availability[5]. This recognition has led to active engagement in groundwater management discussions, exemplified by the annual National Symposium on "*Challenges and Opportunities for Sustainable Management of Groundwater Resources in Nepal*."

2. Evolution of the National Groundwater Symposium

First convened in 2009 by the Center of Research for Environment, Energy and Water (CREEW), the symposium has evolved significantly over its 17-year history and has become a key platform for stakeholders to address groundwater-related issues[6]:

Period	Thematic Focus
2009–2013	Local focus: groundwater in the Kathmandu Valley
2014–2023	National focus: countrywide groundwater issues
2024	Expanded regional perspective
2025	First symposium outside Kathmandu: provincial and municipal engagement in Janakpurdham, Madhesh Province
2026	Continued Madhesh focus with enhanced action-oriented outcomes and accountability mechanisms

[1] https://www.unesco.org/reports/wwdr/2022/en
[2] Margat, J., & Van der Gun, J. (2013). *Groundwater around the world: a geographic synopsis*. Crc Press.
[3] M. Smith, K. Cross, M. Paden, P. Laban (Eds.), Spring – Managing Groundwater Sustainably, IUCN, Gland, Switzerland (2016), 10.2305/IUCN.CH.2016.WANI.8.en
[4] UN World Water Development Report 2022: https://bit.ly/40HLwsX
[5] https://dwri.gov.np/un2023waterconference/Position-Paper.pdf
[6] https://www.creew.org.np/groundwater-symposium/

More than 1,200 participants attended the thirteen previous symposiums. The 2026 edition builds directly upon the 2025 proceedings, with a deliberate intent to review the status of previous recommendations and drive accountability for implementation.

3. The Urgency of Groundwater Security in Madhesh Province

The Terai region of Nepal, a lifeline for agriculture and drinking water, heavily depends on groundwater resources[7]. Groundwater depletion, arsenic contamination, and industrial pollution continue to threaten the health and livelihoods of millions in the Terai[8]. Uncontrolled deforestation and extraction activities in the Chure region are disrupting the water cycle, leading to a decline in groundwater levels both locally and in the lower plains, as evident in the Kamala River basin, where groundwater depth increased from 2.4 meters in 2008 to 7.2 meters in 2015, reflecting the broader regional impact on groundwater[9]. A study conducted in Siraha District revealed that groundwater levels in boreholes had started to decline in certain areas, especially in the northern Bhabar Zone, emphasizing the localized challenges within the larger regional context. Despite this decline, 88% of the groundwater in the Terai region that could be sustainably abstracted based on annual recharge remains untapped, presenting a significant opportunity for increased groundwater utilization[11].

Groundwater levels in the Terai fluctuate by about 3 meters annually and remain generally stable over the long term, but a decline in seasonal variation suggests that changing rainfall patterns—characterized by fewer rainy days and higher intensity—are increasing surface runoff and reducing percolation to the water table[12]. Despite abundant groundwater resources, water scarcity in many parts of the Chure and Bhabar regions of Madhesh Province is exacerbated by over-reliance on irrigated agriculture, with groundwater failing to meet growing demand in many areas due to deepening water tables, rising population density, and seasonal droughts, particularly in rural settlements where deep tube wells are costly and often

[7] Understanding Groundwater for Proper Utilization and Management in Nepal: https://publications.iwmi.org/pdf/H039311.pdf
[8] Water scarcity and excess: water insecurity in cities of Nepal: https://doi.org/10.2166/ws.2023.072
[9] Singh, D. (2016). A study of the effect of Chure degradation on water: A case of Kamala Basin in Nepal (Briefing Paper No. 19). South Asia Watch on Trade, Economics and Environment (SAWTEE). https://sawtee.org/publications/Briefing-Paper-29.pdf
[10] From source to tap: Improving water supply in Lahan, Nepal. https://washmatters.wateraid.org/sites/g/files/jkxoof256/files/from-source-to-tap-lessons-from-improving-water-supply-in-lahan-nepal_0.pdf
[11] Urfels, A., McDonald, A. J., Krupnik, T. J., & van Oel, P. R. (2020). Drivers of groundwater utilization in water-limited rice production systems in Nepal. Water International, 45(1), 39–59. doi:10.1080/02508060.2019.1708172
[12] Bharati, L., Sharma, B.R., & Smakhtin, V. (2016). The Ganges River Basin: Status and challenges in water, environment and livelihoods. Routledge - Earthscan, Oxon, UK
[13] Study of the uses of subsurface water resources in Province 2 (Madhesh Province). https://chureboard.gov.np/storage/files/study-of-the-uses-of-subsurface-water-resources-in-madhesh-province1697725759.pdf

inadequate to meet demand[13]. While many regions in the Terai fail to tap into the potential of the available groundwater, others face severe water scarcity, underscoring the importance of understanding aquifer dynamics and fostering knowledge share among local stakeholders for effective and sustainable groundwater management.

Key Challenges Include

- Groundwater depletion: In the Kamala River basin, groundwater depth increased from 2.4 metres in 2008 to 7.2 metres in 2015, reflecting the broader regional trend.
- Arsenic contamination and industrial pollution: Continuing threats to public health in the Terai.
- Chure degradation: Uncontrolled deforestation and extraction in the Chure region disrupts the water cycle and reduces aquifer recharge.
- Changing rainfall patterns: Fewer rainy days combined with higher intensity events increase surface runoff and reduce percolation, threatening long-term water table stability.
- 2025 Drought Crisis: The monsoon of 2082 B.S. delivered barely 46% of normal rainfall. Wells and boreholes dried up in most parts of the province. Both provincial and federal governments declared Madhesh a Drought Disaster Zone — an unprecedented step in Nepal's history

4. Rationale for Organizing in Madhesh Province (Second Consecutive Year)

The decision to hold the 14th Symposium again in Madhesh Province was deliberate and justified by several critical factors:

- Groundwater problems identified in 2025, declining water tables, over-extraction, pollution, and reduced recharge, remain unresolved and have worsened in several areas.
- The 2025–2026 drought crisis elevated groundwater stress from a development concern to an immediate humanitarian emergency.
- The symposium builds directly upon the proceedings, recommendations, and community engagement initiated at Janakpurdham in 2025, ensuring continuity and institutional follow-through.
- Re-hosting in the same province reinforces provincial ownership and supports municipalities in integrating groundwater management into local planning and budgeting cycles.
- Reviewing the status of 2025 action points in 2026 demonstrates accountability and drives implementation — a core principle of effective development practice.
- Nearly 448 water supply projects in Madhesh Province remain incomplete, many requiring only modest additional investment to become operational.

B. Aims and Objectives of the Symposium

The 14th National Groundwater Symposium-2026 was designed with six core objectives, reflecting the 2026 emphasis on transition from dialogue to action:

1. **Enhance Awareness and Urgency:** Emphasize the critical importance of groundwater resources, the urgency of current challenges, and the imperative for immediate, sustained action in sustainable groundwater management.
2. **Facilitate Knowledge Exchange and Innovation:** Share the latest research findings, innovative solutions, and proven best practices including the relationship between vegetation/plants and groundwater with emphasis on practical applications relevant to Madhesh Province.
3. **Strengthen Multi-Stakeholder Coordination:** Foster collaboration among federal, provincial (Madhesh, Koshi, and Lumbini), and local governments, development partners, research institutions, private sector, and communities for coordinated approaches to groundwater challenges.
4. **Build Provincial Capacity:** Support provincial and local governments in developing technical, institutional, and financial capacity for sustainable groundwater management integrated into development planning.
5. **Ensure Accountability and Action:** Review the status of recommendations and action points from the 2025 Symposium and establish clear accountability mechanisms and commitments for 2026–2027.
6. **Enhance Community and Grassroots Participation:** Ensure meaningful participation of water user groups, community representatives, grassroots stakeholders, and local governments; giving voice to groundwater users from the field.

C. Symposium Structure and Program Overview

The 14th National Groundwater Symposium was structured as a full-day event featuring a carefully sequenced combination of inaugural proceedings, context-setting presentations, technical sessions, practitioner cluster sharing, open multi-stakeholder discussion, and a closing accountability session. The program was coordinated by MC Er. Samjhana Lamichhane. The summary of the symposium schedule is as follows

Topic / Activity	Presenter / Responsible
All Participants	*Registration with Refreshments*
Dr. Dhundi Raj Pathak, President, CREEW	*Welcome Note, Objectives, and Review of Past Symposiums*
Er. Sanjeeb Baral, Executive Director, WRERC/WECS, GoN	*Keynote: From Knowledge to Action – Implementing Groundwater Resilience in Madhesh*
Er. Laxmi Pant, Sr. Divisional Engineer, MoEIWS, Madhesh Province	*Provincial Response to the 2025 Water Crisis in Madhesh Province*
Ms. Arinita Maskey Shrestha, WASH Specialist, UNICEF Nepal	*Development Partners in Action: Activities, Challenges and Learnings*
Federal, Provincial & Municipal Officials	*Remarks from Guest Dignitaries (12 speakers)*
Prof. V.P. Pandey / Dr. B.R. Thapa / Dr. M. Khadka	*Technical Session: Groundwater Development and Management (3 presentations)*
Chaired by Prof. K.C.P. Sah	*Questions and Discussion*
All Participants	*Lunch and Networking*
Moderated by Er. Kabindra Pudasaini, WaterAid Nepal	*Development Partners & Sector Cluster Sharing (5 sectors)*
All Participants	*Open Floor Multi-Stakeholder Discussion*
Er. Ram Kumar Khang, Acting Secretary, MoEIWS	*Closing Remarks and Vote of Thanks*

D. Session Proceedings and Key Findings

1. Opening and Welcome

The symposium opened at 09:15 with the welcoming of dignitaries to the dais, followed by a comprehensive welcome address and review of past symposiums delivered by Dr. Dhundi Raj Pathak, President of CREEW. Dr. Pathak traced the event's evolution from a localized technical gathering in 2009 into what he described as a "comprehensive, integrated platform" for groundwater governance; a platform now convening more than 150 participants annually and having engaged over 1,200 stakeholders across 13 prior editions. He underscored the symposium's thematic progression from purely technical foundations, through governance expansion, to today's emphasis on holistic integration and accountability.

Figure 1: Group photo taken during the symposium

2. Context-Setting Presentations

2.1 Keynote: From Knowledge to Action – Implementing Groundwater Resilience in Madhesh

Er. Sanjeeb Baral, Executive Director of the Water Resources and Energy Research Center (WRERC)/WECS, Government of Nepal, delivered the keynote address. Placing Madhesh's crisis within the global water security challenge, Er. Baral highlighted that 2.1 billion people worldwide lack safe drinking water, that four billion face water scarcity for at least one month each year, and that women and girls collectively spend 250 million hours daily collecting water — hours lost to education and economic opportunity.

Turning to Madhesh, Er. Baral provided a detailed account of the 2025 water crisis: the monsoon of 2082 B.S. delivered only 46% of normal rainfall, resulting in the widespread drying of wells and boreholes across the province, and compelling both provincial and federal governments to declare Madhesh a Drought Disaster Zone for the first time in history. He characterized this not as a one-year anomaly but as evidence of a deeper climate change trend exposing Madhesh's structural vulnerability to shifting weather patterns.

Key Messages — Keynote Address

- Madhesh's 2025 drought crisis is part of a systemic climate change trend, not a one-off event
- Transition from knowledge and diagnosis to concrete, time-bound implementation is

the defining challenge

- Groundwater resilience must be embedded in provincial development planning and budgeting cycles
- Interoperability between federal, provincial, and local data systems is critical for evidence-based decisions
- Women and marginalized communities must be central actors, not peripheral beneficiaries, in water governance

2.2 Provincial Response to the 2025 Water Crisis in Madhesh Province

Er. Laxmi Pant, Senior Divisional Engineer at MoEIWS, Madhesh Province, presented the provincial government's structured response framework across three pillars:

- Legal and Regulatory Reform: Dedicated provincial groundwater legislation with clear delineation of responsibilities among federal, provincial, and local government tiers.
- Institutional Realignment: Establishing clear mandates and resourcing dedicated groundwater management institutions at the provincial level.
- Integrated Implementation: Nature-based solutions including the protection of Chure-Bhabar recharge zones from unchecked mining and extraction, and expedited completion of the long-pending Sunkoshi-Marin Diversion Project, which would irrigate 122,000 hectares across six Madhesh districts.

Er. Pant called for coordinated action across tiers of government, emphasizing that legislative gaps and unclear institutional mandates have been primary barriers to effective groundwater management in the province.

2.3 Development Partners in Action in Madhesh Province

Ms. Arinita Maskey Shrestha, WASH Specialist at UNICEF Nepal, presented a sobering field assessment from Hansapur, Dhanusha, where 90% of community tubewells in all nine wards dried up during the 2025 crisis. Her presentation identified a pattern of systemic failures common across Madhesh Province:

- Fragmented provincial data: Absence of an integrated groundwater monitoring and information system.
- Limited driller competency: Knowledge gaps among well-drilling contractors regarding aquifer depth and geology.
- Low community awareness: Insufficient community knowledge about groundwater recharge, water table fluctuations, and conservation behaviors.
- Reactive crisis management: A persistent tendency among local governments to respond to water crises after they occur rather than investing in preparedness and sustainable infrastructure.

Ms. Maskey Shrestha emphasized UNICEF's field-level evidence as a call to action for systematic capacity building and integrated WASH programming at the local government level.

3. Inaugural Session: Remarks from Dignitaries

The inaugural session was chaired by Er. Ram Kumar Khang, Acting Secretary, MoEIWS, Madhesh Province, and featured remarks from twelve distinguished guests representing federal and local government offices and provincial leadership. Key messages from the inaugural session included:

- Er. Mihir Chandra Accharya (Office Chief, Federal DWSSM, Janakpur): Stressed the need for stronger coordination between the federal Drinking Water Supply and Sewerage Management division and provincial authorities to address Madhesh's water crisis.
- Mr. Arvind Lal Karn (Chief Administrative Officer, Birgunj Metropolitan City): Highlighted the urban dimensions of groundwater depletion in Birgunj and called for metropolitan-level groundwater management plans.
- Er. Tika Ram Baral (Joint Secretary, WECS): Reaffirmed WECS's commitment to leading coordinated national action on groundwater and supporting provincial capacity development.
- Ms. Laxmi Kumari Shrestha (Deputy Mayor, Karjanha Municipality) and Ms. Manti Sah (Deputy Mayor, Golbazzar Municipality): Shared frontline municipal challenges in providing reliable drinking water under deteriorating groundwater conditions.
- Hon. Mr. Raj Kumar Singh (Vice-Chairman, Madhesh Province Policy and Planning Commission): Noted the dramatic decline in groundwater accessibility, observing that wells once struck water at 100–200 feet but now require 450–600 feet — a critical indicator of rapid depletion requiring immediate policy response.
- Er. Ganesh Shah (Former Minister for Environment, Science and Technology, GoN): Cautioned against the destructive trend of converting ponds and reservoirs into paved surfaces in the name of urban beautification. He urged planners to restore these waterbodies to preserve the natural soil-water relationship critical for aquifer recharge.
- Mr. Jawaharlal Khushwaha (Chief Guest, Hon. Minister, MoEIWS, Madhesh Province): Underscored that nearly 448 water supply projects in the province remain incomplete, many of which could be operationalized with modest additional investment. He stressed the urgency of resolving ownership disputes stalling projects and committed to expedited completion.

Closing the inaugural session, Session Chair Er. Ram Kumar Khang noted the convergence of political will and technical evidence at the symposium as a foundation for delivering tangible outcomes for Madhesh's water-stressed communities.

4. Technical Session: Groundwater Development and Management

The afternoon technical session was chaired by Prof. Krishna Chandra Prasad Sah and featured three rigorous research presentations that provided the empirical foundation for the day's policy discussions.

4.1 Groundwater in Madhesh Province: What We Know and What We Don't Know

Prof. Vishnu Prasad Pandey of the Institute of Engineering, Tribhuvan University, delivered a candid and systematic inventory of the current state of knowledge regarding Madhesh's groundwater resources. His presentation highlighted significant data and knowledge gaps that continue to hinder effective management:

- Cross-border groundwater flows with India remain poorly understood, despite the transboundary nature of the Terai aquifer system.
- Geospatial maps and technical guidelines for aquifer identification and targeted tapping are largely absent for most of Madhesh Province.
- No workable, comprehensive action plan for groundwater governance currently exists at the provincial level.
- Monitoring network coverage is insufficient to support evidence-based management decisions.

Prof. Pandey concluded with a clear prescription: "Political will, integrated with community support, a dedicated institution, and an integrated database are the keys to sustainable groundwater development." He called for investment in provincial hydrogeological mapping, aquifer characterization, and the establishment of a provincial groundwater information management system.

4.2 Recharging the Future: Managed Aquifer Recharge (MAR) Practice for Sustainable Water Security

Dr. Bhesh Raj Thapa of the Universal Engineering and Science College (UESC), Pokhara University, presented evidence on Managed Aquifer Recharge (MAR) as a practical and scalable tool for restoring water security in the Terai. The presentation demonstrated:

- MAR techniques — including check dams, spreading basins, percolation ponds, and recharge wells — can significantly enhance groundwater replenishment in suitable geological settings.
- Protecting and restoring the Chure-Bhabar recharge zones is among the highest-impact interventions available for sustaining Terai aquifers.
- Community-managed MAR structures have demonstrated success in parts of the Terai and offer a scalable model for municipal and local government adoption.
- Integration of MAR into land use planning and infrastructure development is essential to ensure that urbanization does not further compromise natural recharge.

Dr. Thapa emphasized that MAR is not merely a technical intervention but requires governance frameworks, community participation, and sustained monitoring to deliver lasting results.

4.3 Groundwater Governance in Madhesh Province

Dr. Manohara Khadka, Country Representative of the International Water Management Institute (IWMI) Nepal, presented a comprehensive governance framework for sustainable groundwater management encompassing seven dimensions:

- People-centered policymaking: Ensuring that water governance frameworks are grounded in the needs and rights of water users, particularly vulnerable and marginalized communities.
- Inclusive community engagement: Meaningful participation of women, smallholder farmers, and marginalized groups in groundwater decision-making.
- Institutional clarity and coordination: Clear delineation of roles and responsibilities across federal, provincial, and local government tiers.
- Data and evidence systems: Integrated groundwater monitoring and information systems as the foundation for adaptive management.
- Financial sustainability: Developing financing mechanisms that ensure long-term operation and maintenance of groundwater infrastructure.
- Regulatory frameworks: Enforceable legislation governing groundwater extraction, quality protection, and recharge zone conservation.
- Transboundary water diplomacy: Bilateral engagement with India to address the shared nature of Terai aquifers and manage cross-border groundwater flows.

A lively question-and-answer session followed the three technical presentations, with participants engaging vigorously on practical pathways to implementing the proposed frameworks within Madhesh Province's administrative and financial realities.

5. Technical Session: Development Partners and Sector Cluster Sharing

Moderated by Er. Kabindra Pudasaini of WaterAid Nepal, this session gave voice to ground-level practitioners rarely heard in formal policy settings. Five sector clusters shared their experiences, challenges, and unanswered questions in seven-minute structured presentations:

5.1 Experience of Municipalities

Municipal representatives shared the urban water security challenges their cities face daily. Common themes included: rapidly depleting groundwater forcing ever-deeper drilling; inadequate financial resources for systematic monitoring or infrastructure upgrading; absence of municipal-level hydrogeological data; and the challenge of managing competing demands from domestic, commercial, and industrial water users. Municipalities expressed urgent need for technical assistance, updated aquifer data, and stronger links to provincial and federal support systems.

5.2 Experience of Water Supply Corporations and Utilities

The Nepal Water Supply Corporation (NWSC) representative described the operational challenges facing water utilities in a context of declining groundwater: increasing costs of drilling and pumping from greater depths; aging infrastructure originally designed for shallower water tables; quality concerns as deeper aquifers exhibit different chemical profiles; and the challenge of maintaining service continuity during seasonal shortfalls. The representative called for policy support to facilitate infrastructure upgrades and cost-recovery tariff reforms.

5.3 Experience of the Drilling and Well Industry

Representatives of the Construction and Tubewell Drilling Companies shared the drilling sector's perspective. He highlighted the dramatic deepening of required borehole depths — now commonly 450–600 feet in areas where 150 feet was sufficient a decade ago. They noted that the industry faces knowledge gaps in understanding aquifer geology, and called for government investment in geological survey data that drillers can use to improve targeting accuracy and reduce unsuccessful borings that impose costs on communities.

5.4 Experience of the Agriculture and Livestock Sector

Er. Saroj Adhikari of the Department of Agriculture and Livestock/Agriculture Mechanization Promotion Center (DoAL/AMPC), Dhanusha, presented the agricultural sector's heavy dependence on groundwater irrigation and the emerging threat to food security posed by declining water tables. He noted that farmers are investing in deeper tube wells to maintain irrigated areas, increasing extraction at a time when recharge is declining. He called for integrated water management approaches that align agricultural water use with sustainable aquifer management principles.

6. Open Floor Multi-Stakeholder Discussion

The open multi-stakeholder discussion session, a defining feature of the 2026 symposium's commitment to inclusive participation brought together voices from provincial government, local governments, water user groups, and community representatives. The session captured a rich diversity of perspectives on groundwater management priorities:

- Provincial government shared the experience of worsening groundwater stress and expressed the need for cross-provincial and cross-border information sharing and coordinated policy responses.
- Local government representatives consistently highlighted the gap between their mandated responsibilities for water supply and their technical and financial capacity to fulfill them.
- Water user group representatives emphasized the disconnect between formal policy discussions and the daily realities faced by water-stressed communities.
- Community voices reinforced the urgency of addressing the human dimension of groundwater depletion, including impacts on health, livelihoods, and social equity.

The discussion confirmed that while technical knowledge about Madhesh's groundwater challenges is improving, the gap between knowledge and action remains the central challenge that reinforced the 2026 symposium's overarching theme.

7. Closing Session

The closing session, led by MoEIWS and chaired by Er. Ram Kumar Khang, Acting Secretary, represented a deliberate innovation: rather than a conventional summary, he urged all partner organizations to work together creating a structured accountability mechanism that signals a meaningful shift in the symposium's purpose.

Er. Khang's closing remarks struck an unusually concrete note. He announced that MoEIWS intends to scale similar dialogues beyond the provincial capital to district and local government levels, embedding groundwater governance more deeply into subnational planning cycles. He reaffirmed the ministry's commitment to results: "We are not just enthusiastic — we are committed to results."

E. Key Findings and Discussion Points

1. The Groundwater Crisis is Structural, Not Cyclical

The 2025 drought was not merely a weather event. It exposed the structural vulnerability of Madhesh Province to compounding pressures: climate variability, land degradation in the Chure, unregulated extraction, growing agricultural and urban demand, and governance fragmentation. The declaration of a Drought Disaster Zone is a policy milestone that should catalyze sustained institutional reform, not only emergency response.

2. Data and Knowledge Gaps Remain a Binding Constraint

Multiple presentations confirmed that decision-makers at all levels lack the fundamental data required for evidence-based groundwater management: hydrogeological maps, aquifer characterization, cross-border flow estimates, and integrated monitoring systems are either absent or insufficient. Closing these gaps through coordinated investment in provincial data infrastructure is an urgent priority.

3. Governance Fragmentation Impedes Effective Management

The absence of dedicated provincial groundwater legislation, unclear delineation of responsibilities across government tiers, and weak coordination between sector ministries (water, agriculture, environment) have created a governance vacuum that allows unsustainable practices to continue. The comprehensive governance framework presented by IWMI Nepal provides a practical roadmap for addressing these deficiencies.

4. Recharge Must Be as Much a Priority as Extraction

The symposium generated strong consensus that addressing Madhesh's groundwater crisis requires equal attention to supply-side conservation and demand-side management. Protecting Chure-Bhabar recharge zones, restoring ponds and waterbodies, promoting MAR practices, and regulating extraction must be pursued simultaneously.

5. Community Engagement is Essential for Sustained Impact

Field evidence from DPs and community representatives confirmed that technical interventions without community ownership and awareness have limited sustainability. Meaningful participation of water user groups — particularly women and marginalized communities — is not only an equity imperative but a practical requirement for effective groundwater management.

6. 448 Water Projects Represent an Immediate Opportunity

The Minister's announcement that nearly 448 water supply projects remain incomplete in Madhesh Province represents a concrete, near-term opportunity to improve water access. Many of these projects require modest additional investment or resolution of ownership disputes. Expedited completion should be treated as a priority short-term action with immediate impact.

F. Future Course of Actions

The 14th National Groundwater Symposium generated the following key recommendations, grouped by theme and timeframe:

1. Legal and Regulatory Framework

1. Develop and enact dedicated provincial groundwater legislation in Madhesh Province that clearly defines rights, responsibilities, and enforcement mechanisms for groundwater extraction, quality protection, and recharge zone conservation.
2. Establish clear legal delineation of groundwater management responsibilities among federal, provincial, and local government tiers to eliminate current governance ambiguity.
3. Extend legal protection to Chure-Bhabar recharge zones, including moratoriums on mining and extraction activities that compromise aquifer replenishment.

2. Data, Research, and Knowledge Management

4. Commission a comprehensive provincial hydrogeological mapping and aquifer characterization study to close the fundamental knowledge gaps identified by Prof. Vishnu Prasad Pandey.
5. Establish an integrated provincial groundwater information management system (GWIMS) accessible to all tiers of government, researchers, and communities.
6. Initiate bilateral technical dialogue with India on cross-border groundwater flows in the shared Terai aquifer system.
7. Invest in training and certification of well-drilling contractors to improve targeting accuracy and reduce unsuccessful borings.

3. Infrastructure and Service Delivery

8. Expedite the completion of all 448 incomplete water supply projects in Madhesh Province through dedicated budget allocations and resolution of ownership disputes.
9. Prioritize the Sunkoshi-Marin Diversion Project, which would irrigate 122,000 hectares across six Madhesh districts, as a medium-term water security investment.
10. Develop and implement a provincial Managed Aquifer Recharge (MAR) programme, integrating check dams, percolation ponds, and spreading basins in high-priority recharge zones.

4. Governance and Institutional Capacity

11. Establish a dedicated provincial groundwater management institution in Madhesh Province with a clear mandate, adequate staffing, and sustainable financing.
12. Integrate groundwater management into provincial and local government annual plans and budget allocations, supported by national fiscal transfer mechanisms.
13. Scale the symposium dialogue to district and local government levels as announced by MoEIWS, ensuring that groundwater governance becomes embedded in subnational planning cycles.

5. Community and Stakeholder Engagement

14. Design and implement systematic community awareness programmes on groundwater recharge, conservation, and sustainable use — particularly targeting women, smallholder farmers, and marginalized communities.
15. Restore degraded ponds, reservoirs, and waterbodies in urban and peri-urban areas, reversing the trend of converting natural recharge features into paved infrastructure.
16. Ensure meaningful participation of water user groups and community representatives in provincial groundwater governance forums and planning processes.

6. Accountability and Follow-Up

17. Formally track the status of all recommendations from both the 2025 and 2026 symposiums at the 15th National Groundwater Symposium, with documented progress reports from each partner organization.
18. Develop a shared accountability framework among all symposium partner organizations, with designated focal points, timelines, and progress indicators for key commitments.
19. Institutionalize the partner action pledge mechanism as a standing feature of the symposium to maintain continuity between annual editions.

G. Participation Overview

The 14th National Groundwater Symposium registered 151 participants, representing a diverse cross-section of stakeholders engaged in groundwater management in Nepal. The symposium maintained its commitment to multi-stakeholder representation, bringing together voices from government, academia, civil society, the private sector, international organizations and media.

Category	Representation
Federal Government	Water and Energy Commission Secretariat (WECS); Federal DWSSM Office, Janakpur; Groundwater Resources Development Board (GWIDD);
Madhesh Provincial Government	MoEIWS Madhesh Province; Provincial Policy and Planning Commission
Other Provincial Governments	WRIDD- Dhanusha; WSSDO-Bara; AMPC-Dhanusha;
Local Governments	Deputy Mayors of Karjanha and Golbazzar and Chief Administrative Officer of the Birgunj Metropolitan City
Academic Institutions	Tribhuvan University (IoE); Pokhara University (UESC)
UN Agencies	UNICEF Nepal
International NGOs	WaterAid Nepal; IWMI Nepal; Welthungerhilfe Nepal; Good Neighborhood Intl.; WVI Nepal
National NGOs / Civil Society	CREEW; SEN; S4W-Nepal; Sabal Nepal; Asman Nepal; CCPM; SODCC Parsa; Mithila Jagaran; LAMP
Private Sector	Drilling contractors; water supply industry representatives
Community Representatives	Water user groups; Irrigation user group
Media	Madhshdristi Newspaper; Kantipur TV; Madhesh Today; RSS; Baahrakhari.com; Deshsanchar.com; NTV; Avnues TV; Radion Nepal; Gorakhapatra Newspaper
Total Participants	151 registered participants

Participation by women was noted as an area for continued improvement. While female representation was relatively lower than that of male participants, women who contributed — particularly as speakers, session chairs, and panelists — made significant and substantive contributions to the proceedings. The symposium organizers are committed to strengthening gender balance in future editions through targeted outreach and programmatic support.

H. Conclusion

The 14th National Groundwater Symposium was an event of genuine consequence. Held at a moment of acute crisis with Madhesh Province reeling from a historically poor monsoon, widespread borehole failure, and the first-ever provincial drought disaster declaration; the symposium provided a critical platform for converging the best available science, policy thinking, field experience, and community voice around a shared agenda for action.

The 2026 edition demonstrated measurable progress beyond its predecessors. The introduction of partner action pledges, the explicit accountability framework for 2025 recommendations, and the commitment by MoEIWS to scale dialogues to district and local levels all signal a maturation in the symposium's approach, a shift from convening conversation to driving change.

Sustaining this momentum will require disciplined follow-through from all partner organizations. The groundwater challenges facing Madhesh Province; declining water tables, governance fragmentation, data deficits, and 448 incomplete water projects are significant but not insurmountable. The technical knowledge, institutional relationships, and political will evidenced at the 14th Symposium provide a strong foundation for the ambitious agenda ahead.

CREEW and its partners remain fully committed to ensuring that the outcomes of the 14th National Groundwater Symposium translate into sustained action for the communities of Madhesh Province and for the sustainable management of Nepal's invaluable groundwater resources.

Annexes

Annex I: Event Agenda & Program Schedule

Challenges and Opportunities for Sustainable Development and Management of Groundwater in Nepal

26 March 2026, Hotel Mithila Yatri Niwas, Janakpurdham, Madhesh Pradesh, Nepal

Program Schedule

Time	Session/Activity	
08:30-09:15	Registration with Refresher (45 minutes)	
09:15-11:25	**Inaugural Session**	**MC: Er. Samjhana Lamichhane**
Session Chair: Er. Ram Kumar Khang, Acting Secretary, MoEIWS, Madhesh Province		
09:15-09:25	Welcoming the Dignitaries on Dais	
09:25-09:40	-Welcome Note and Objectives of the Symposium -Review of the Past Symposiums and Achievements	**Dr. Dhundi Raj Pathak,** President, CREEW
Context Setting		
09:40-10:55	Keynote Presentation: *From Knowledge to Action: Implementing Groundwater Resilience in Madhesh*	**Er. Sanjeeb Baral,** Executive Director, WRERC/WECS, GoN
10:55-11:10	Provincial Response to the 2025 Water Crisis in Madhesh Province	**Er. Laxmi Pant,** Senior Divisional Engineer, MoEIWS, Madhesh Province
11:10-10:30	Development Partners in Action in Madhesh Province: Activities, Challenges and Learnings	**Ms. Arinita Maskey Shrestha**, WASH Specialist, UNICEF Nepal
Remarks from Guests		
10:30-10:35	**Er. Mihir Chandra Accharya**, Office Chief, Federal DWSSM Office, Janakpur	
10:35-10:40	**Mr. Arvind Lal Karn,** Chief Administrative Officer, Birgunj Metropolitan City	
10:40-10:45	**Er. Tika Ram Baral**, Joint Secretary, WECS	
10:45-10:50	**Ms. Laxmi Kumari Shrestha**, Deputy Mayor, Karjanha Municipality	
10:50-10:55	**Ms. Manti Sah**, Deputy Mayor, Golbazzar Municipality	
10:55-11:00	**Mr. Mahesh Prasad Chaudhary,** Mayor, Lahan Municipality	
11:00-11:05	**Dr. Sohan Prasad Sah,** Former Vice-Chairman, Provincial Policy and Planning Commission, Madesh Province	
11:05-11:10	**Hon. Mr. Raj Kumar Singh,** Vice-Chairman, Provincial Policy and Planning Commission, Madhesh Province	
11:10-11:15	Special Guest: **Er. Ganesh Shah,** Former Minister for Environment, Science and Technology, GoN	
11:15-11:20	Chief Guest: **Mr. Jawaharlal Khushwaha,** Hon. Minister, MoEIWS, Madhesh Province	
11:20-11:25	Closing Remarks by the Session Chair: **Er. Ram Kumar Khang,** Acting Secretary, MoEIWS, Madhesh Province	
Group Photo Session and Short Break (11:25-11:35)		
11:35-15:2s0	**Technical Session: Groundwater Development and Management**	
Session Chair: Prof. Krishna Chandra Prasad Sah, Irrigation and Water Resources		
11:35-11:45	Groundwater in Madhesh Province: What we know and What we don't know?	**Prof. Vishnu Prasad Pandey**, IoE/Tribhuvan University

Challenges and Opportunities for Sustainable Development and Management of Groundwater in Nepal

11:45-11:55	Recharging the Future: Managed Aquifer Recharge (MAR) Practice for Sustainable Water Security	**Dr. Bhesh Raj Thapa,** UESC/Pokhara University
11:55-12:05	Groundwater Governance in Madhesh Province	**Dr. Manohara Khadka,** IWMI Nepal
12:05–12:25	Questions and Discussion	
Lunch and Networking (12:25-13:20)		
	Technical Session: Development Partners & Sector Cluster Sharing (7 min for each)	
Moderator: Er. Kabindra Pudasaini, WaterAid Nepal		
13:20-14:20	• **Experience of municipalities** – Janakpurdham, Lahan, and Birgunj municipalities: Urban water security issues faced, solutions adopted and unanswered questions [**Municipalities Representative**] • **Experience of water supply corporations and utilities**: challenges faced, solutions adopted, and unanswered questions [**NWSC Representative**] • **Experience of drilling and well industry:** challenges faced, solutions adopted, and unanswered questions [**Mr. Surendra Sah**, Contractor, Janakpur Construction and Tubewell Drilling Company Pvt Ltd, Janakpur, Dhanusha] • **Experience of agriculture and livestock sector:** challenges faced, solutions adopted, and unanswered questions [**Er. Saroj Adhikari**, DoAL/AMPC/GoN, Dhanusha] • **Experience of enhancing recharge:** challenges, solutions adopted, and unanswered questions [**Mr. Nagdev Yadav**, President, CDAFN, Mahottari]	
14:20-15:20	**Open Floor Multi-Stakeholder Discussion: Answering the Unanswered Questions**	
14:20-15:20	• Understanding of groundwater management and utilization across all stakeholders • Perspective sharing from provincial governments (Madhesh, Koshi, Lumbini), local governments, water user groups, community representatives, and Birgunj/Janakpurdham metropolitan voices • Capture various understanding and priorities of groundwater management	
15:20-16:00	**Closing Session**	
15:20-15:45	Key takeaways and future course of actions [Lead by MoEIWS- inviting all partners for 2 min message]	
15:45-16:00	Concluding and Closing Remarks with Vote of Thanks	**Er. Ram Kumar Khang**, Acting Secretary, MoEIWS, Madhesh Pradesh

Abbreviations/Acronyms

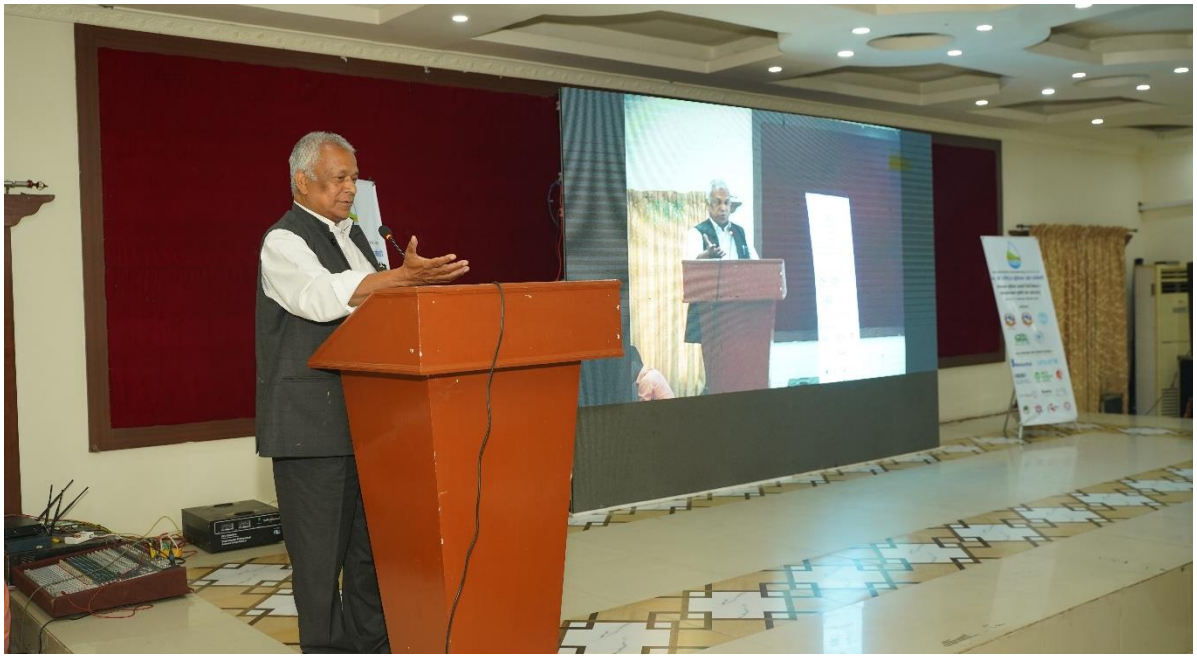
AMPC: Agriculture Mechanization Promotion Center
CDAFN: Community Development and Awareness Forum Nepal
CREEW: Center of Research for Environment, Energy and Water
DoAL: Department of Agriculture and Livestock
DWSSM: Drinking Water Supply and Sewerage Management
GoN: Government of Nepal
IoE: Institute of Engineering
IWMI: International Water Management Institute
MoIEWS: Ministry of Irrigation, Energy and Water Supply
NWSC: Nepal Water Supply Corporation
WASH: Water Sanitation and Hygiene
WECS: Water and Energy Commission Secretariat
WRERC: Water Resources & Energy Research Center
UESC: Universal Engineering and Science College
UNICEF: United Nations Children's Fund

Annex IV: Photographs & Media Coverage

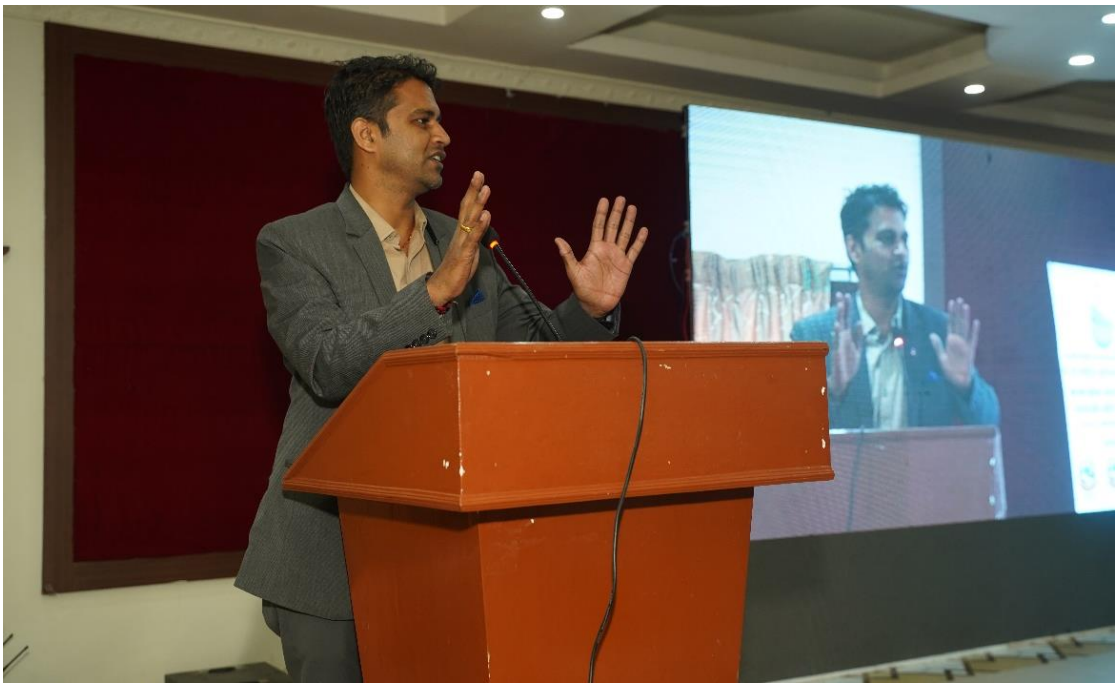
Group Photo of the symposium Participants

Dr. Dhundi Raj Pathak, President, CREEW

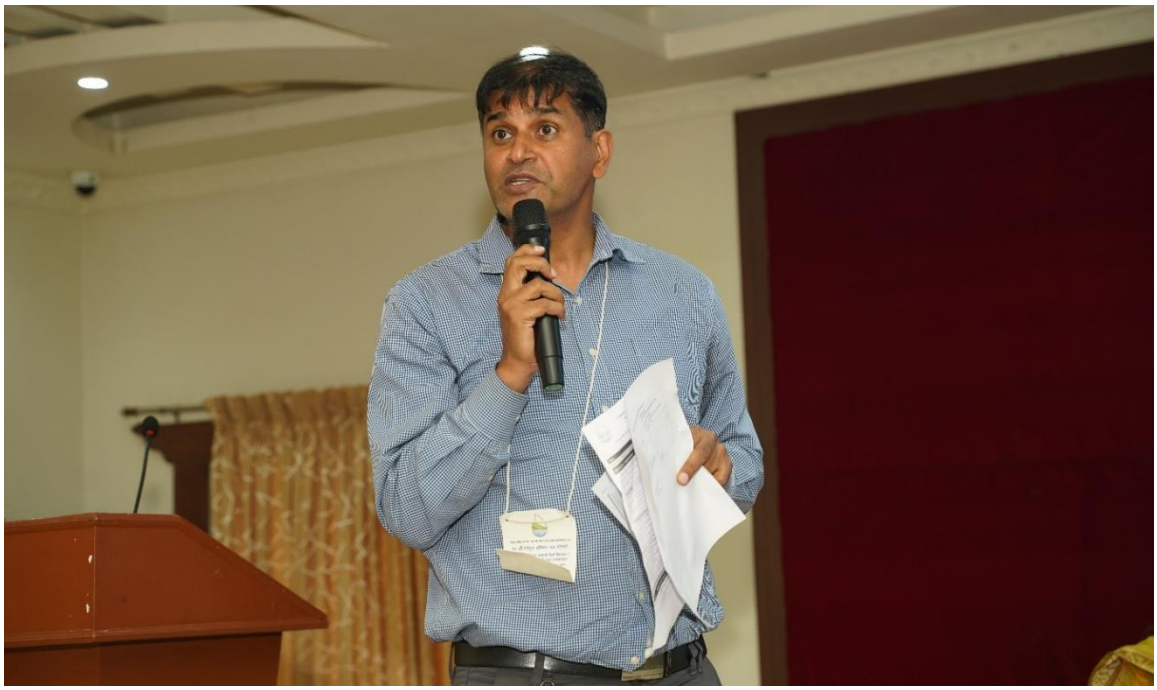
Technical Session: Development Partners & Sector Cluster Sharing



Er. Ganesh Shah, Former Minister for Environment, Science and Technology, GoN

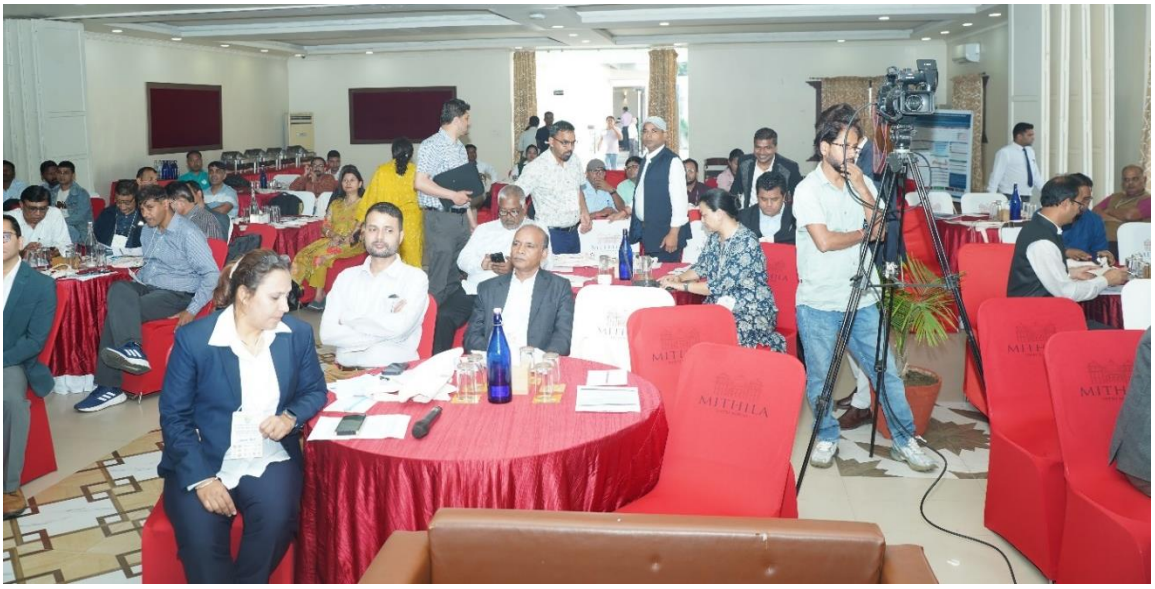


Dr. Sohan Prasad Sah, Vice-chairman, PPPC, Madhesh Province

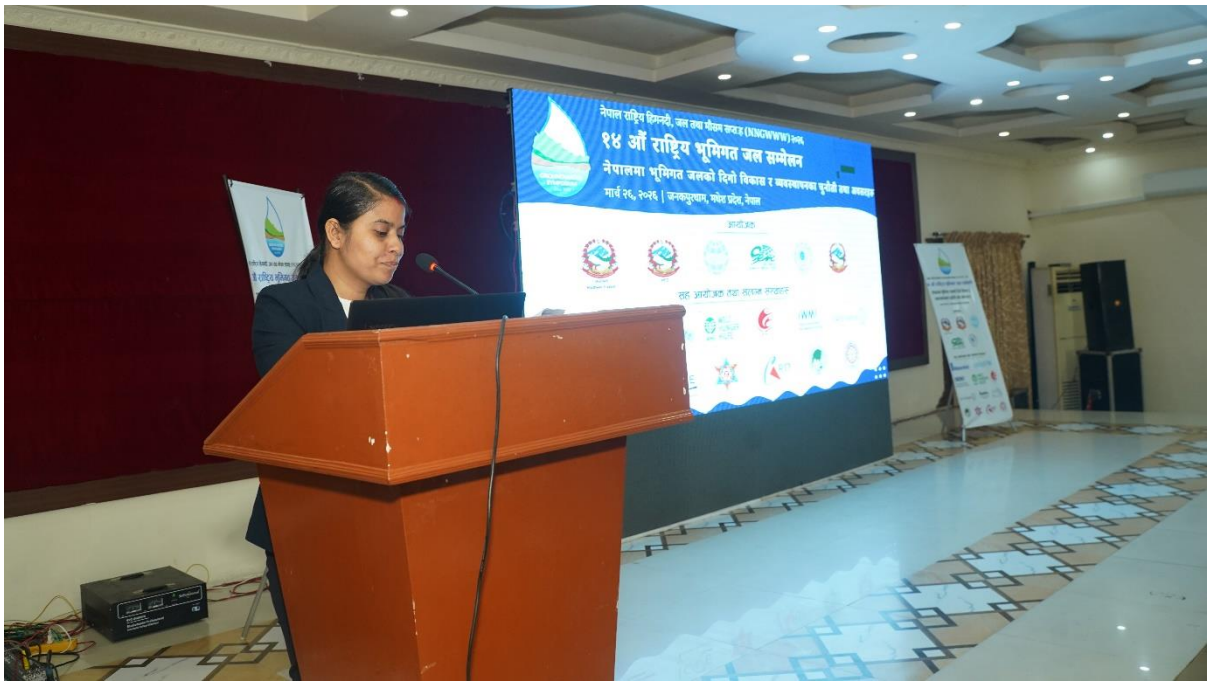


Er. Kabindra Pudasaini, WaterAid Nepal

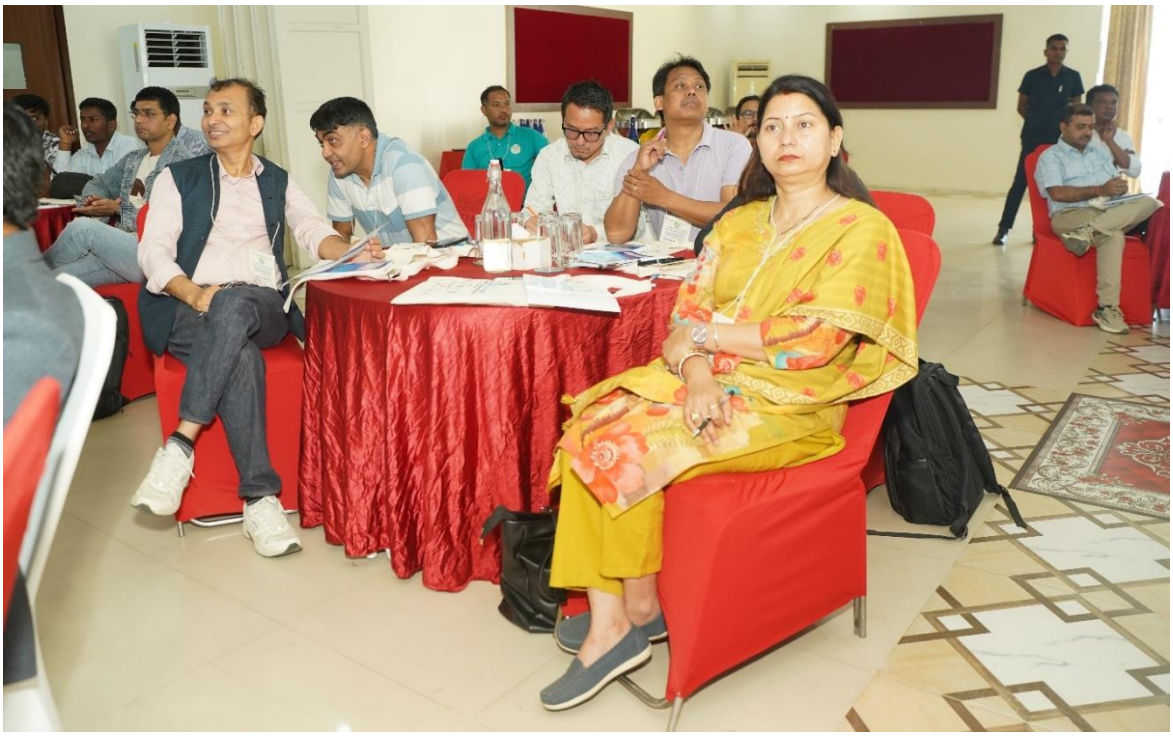
Questiona and Answer Discussion



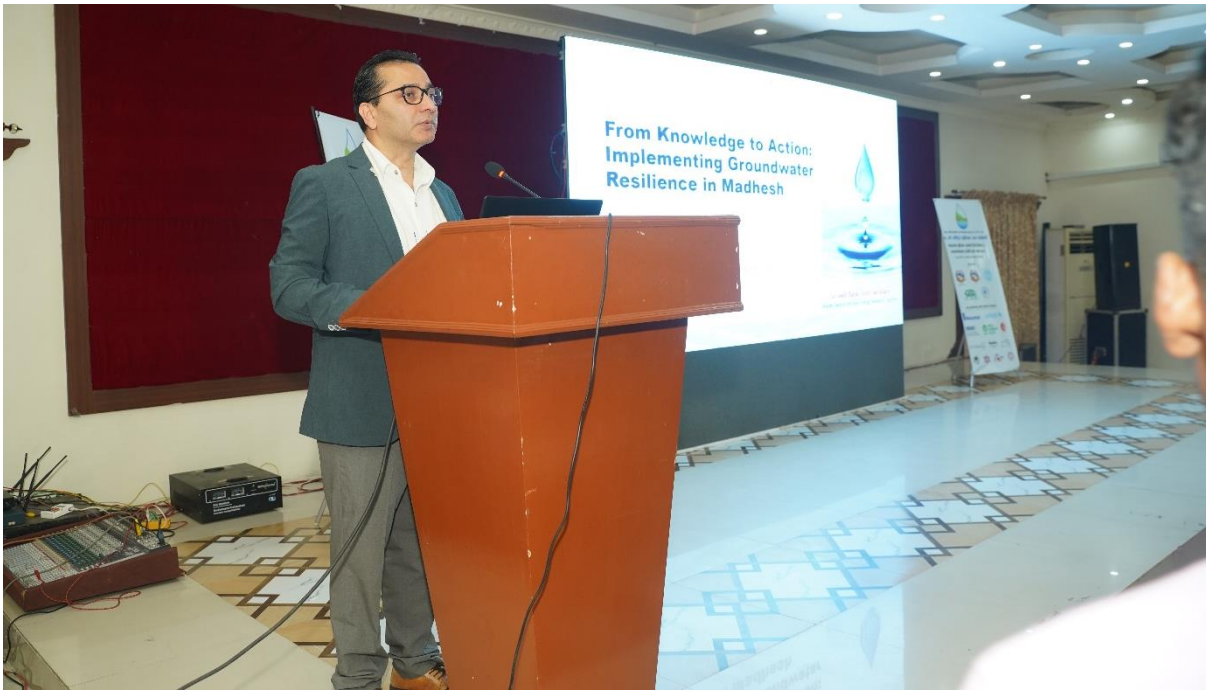
Questiona and Answer Discussion



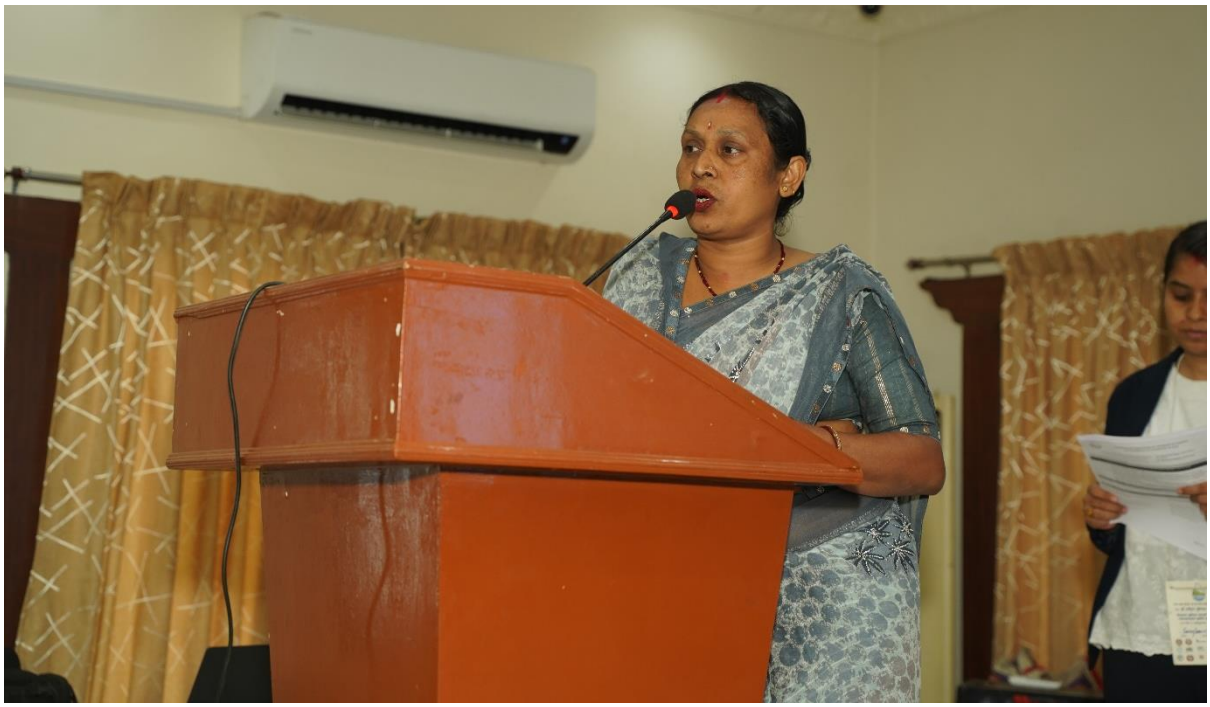
Er. Samjhana Lamichhane, MC of the Symposium



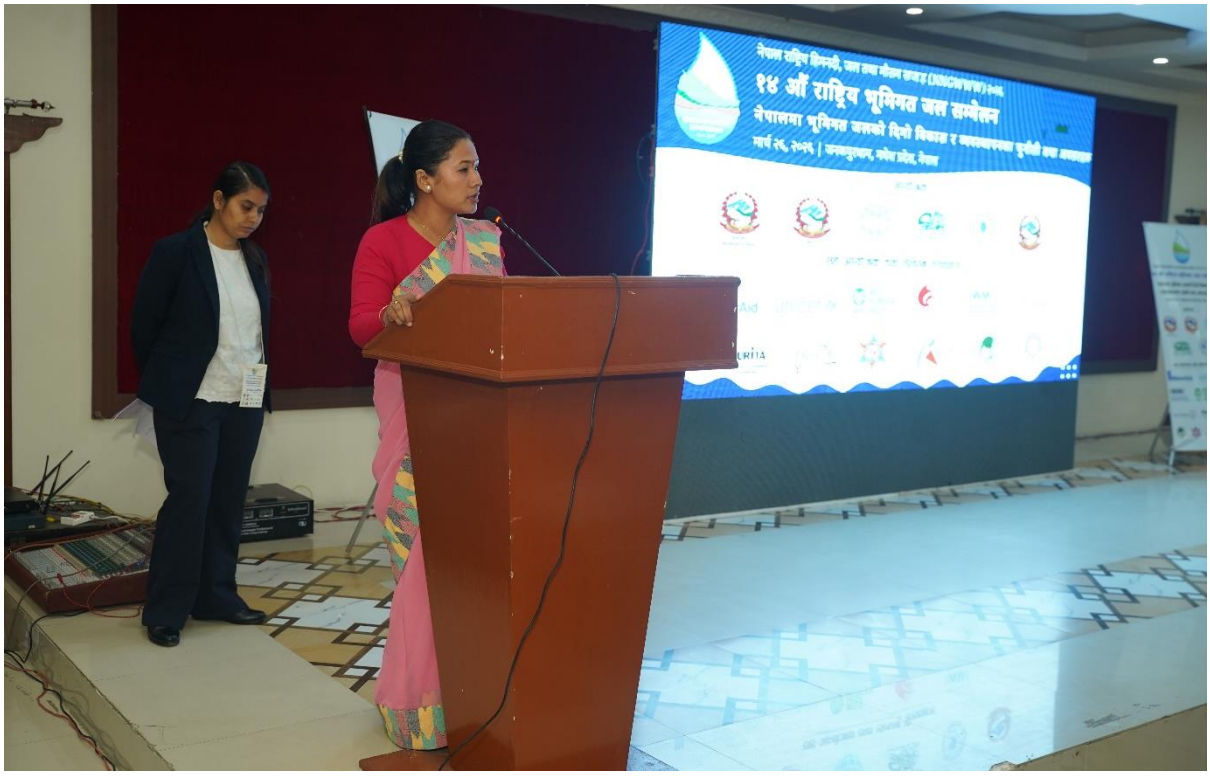
Participants of the Symposium



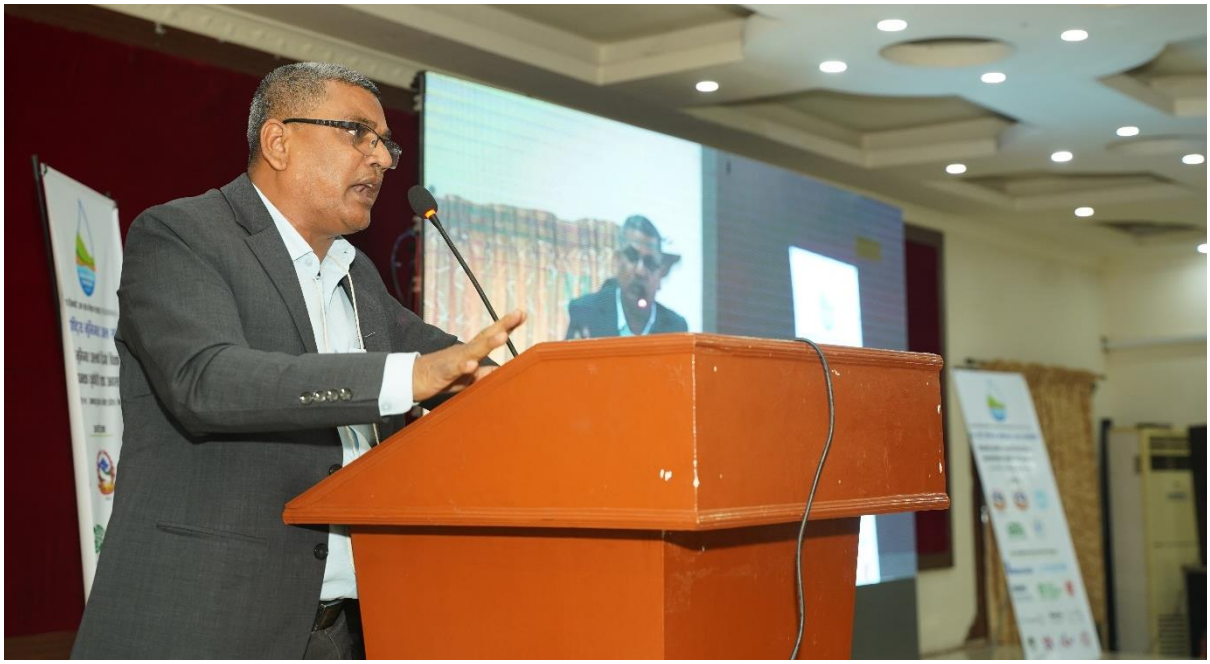
Er. Sanjeeb Baral, Executive Director,



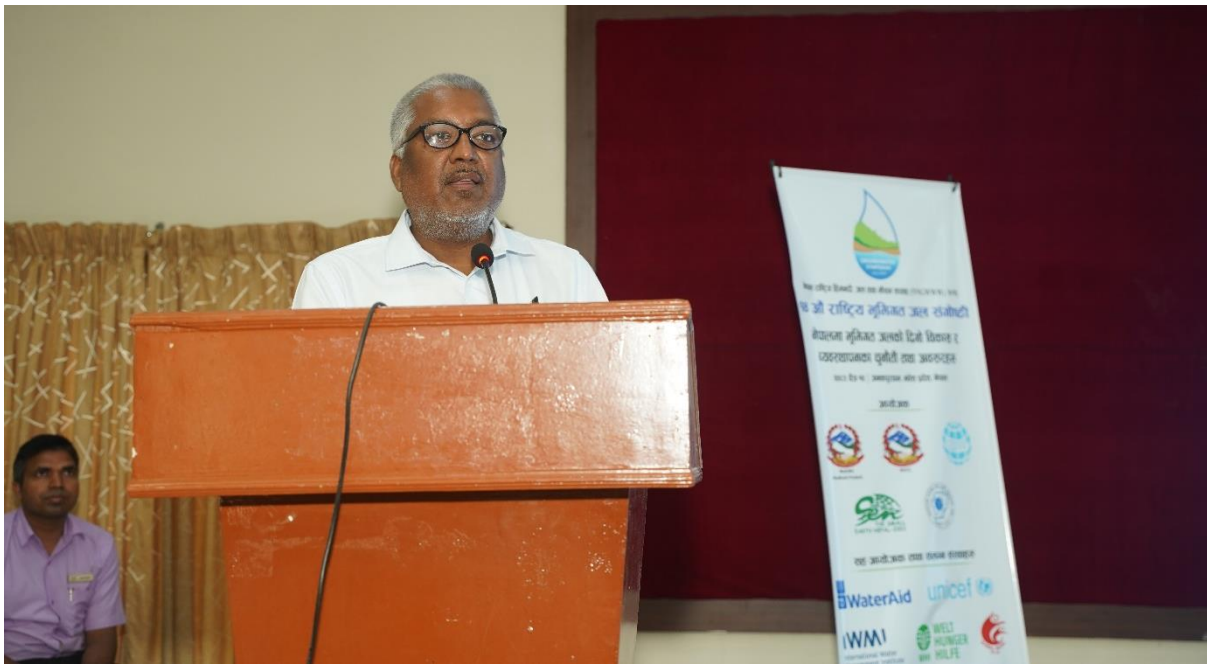
Ms. Manti Sah, Deputy Mayor, Golbazzar Municipality



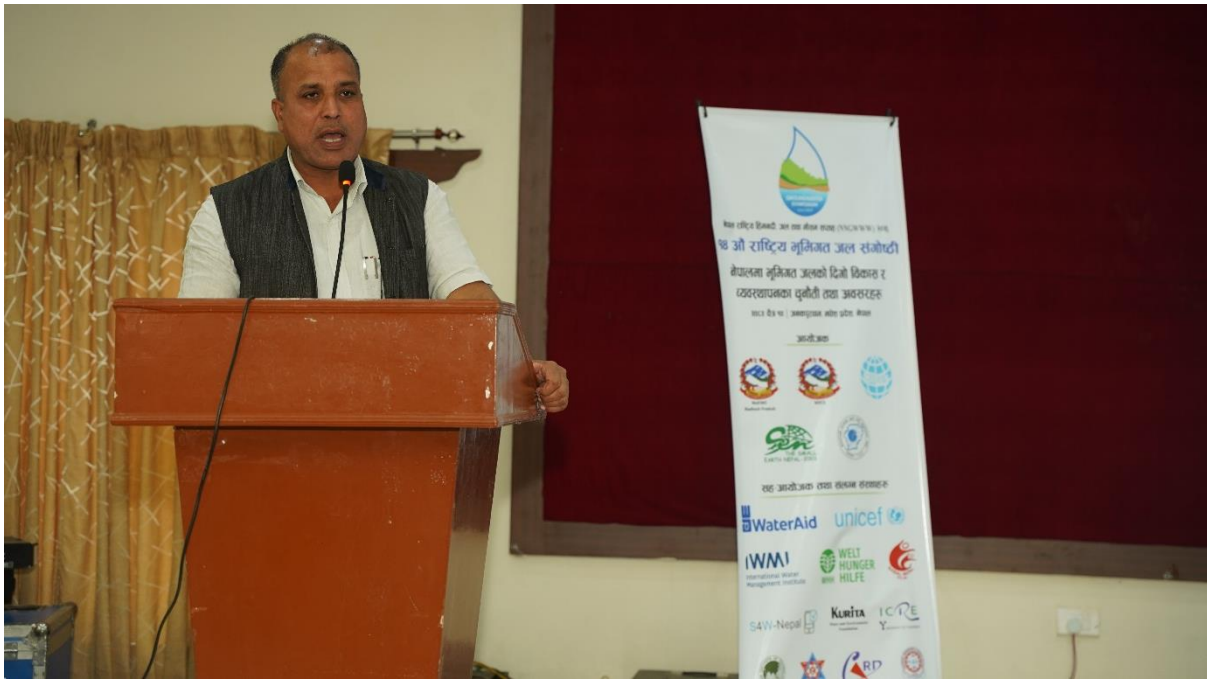
Ms. Laxmi Kumari Shrestha, Deputy Mayor, Karjanha Municipality



Mr. Raj Kumar Singh, Vice-Chairman, Provincial Policy and Planning Commission, Madhesh Province

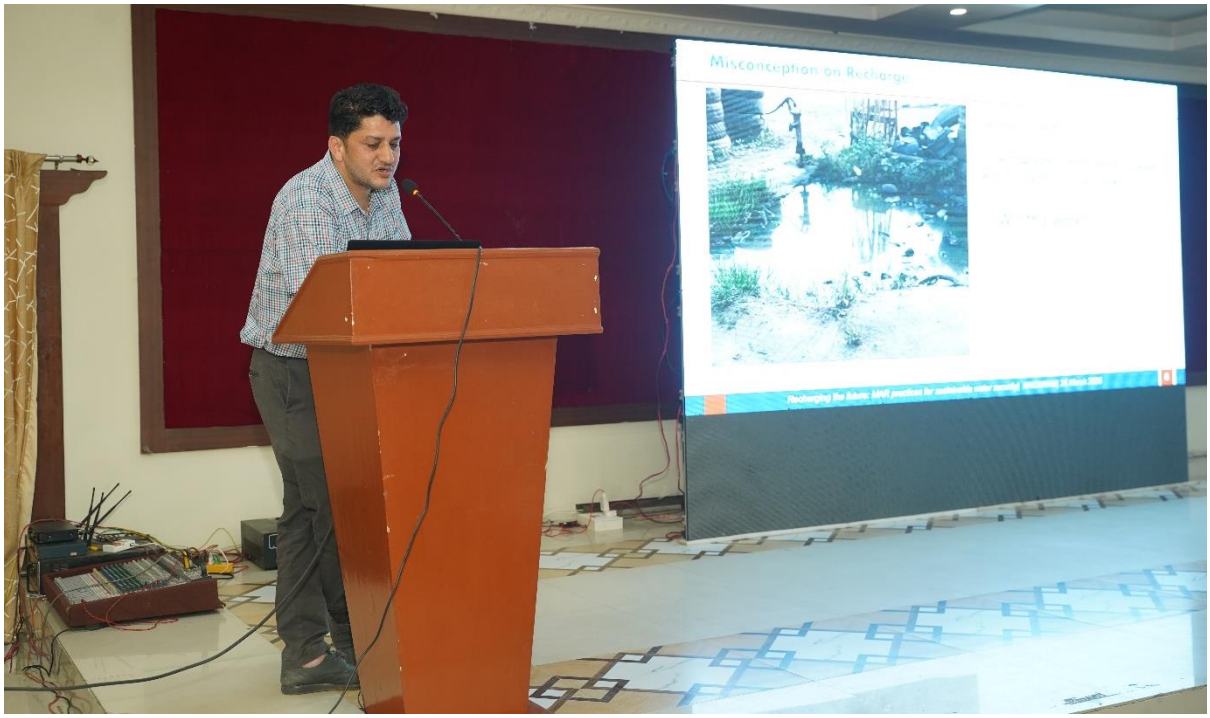


Mr. Arvind Lal Karn, Chief Administrative Officer, Birgunj Metropolitan City

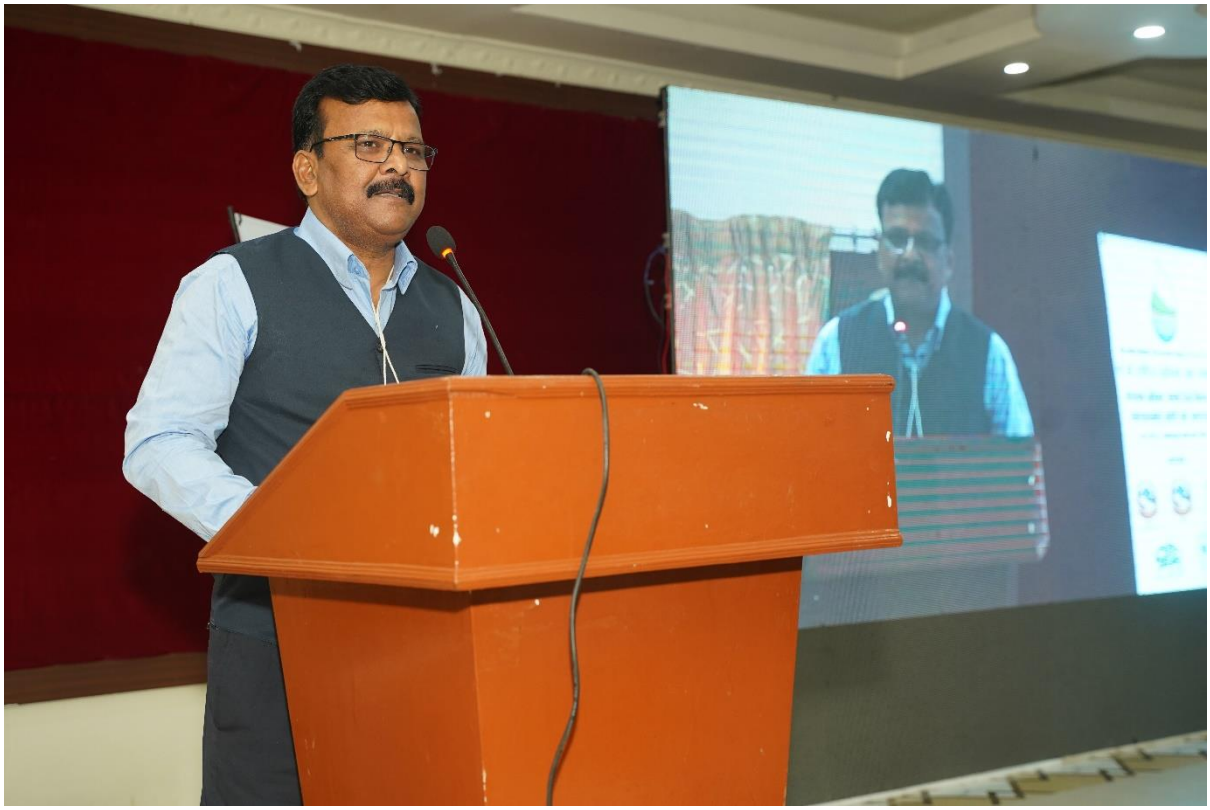


Chief Guest: Mr. Jawaharlal Khushwaha, Hon. Minister, MoEIWS, Madhesh Province

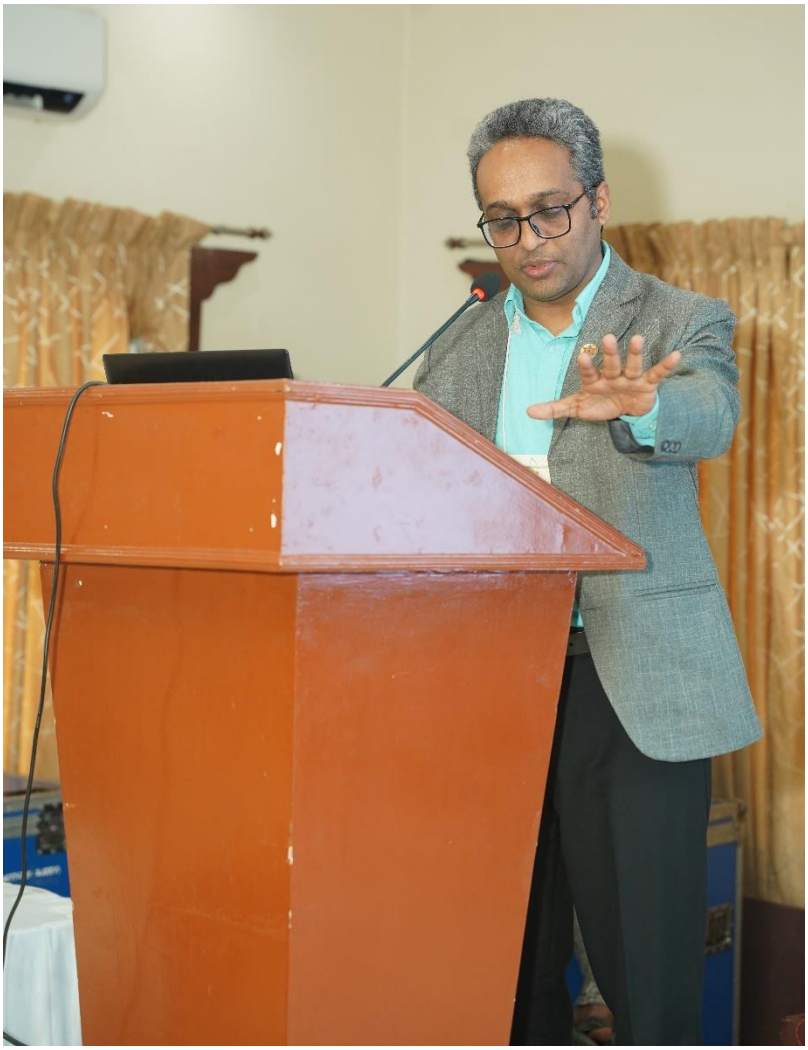
Participants of the Symposium



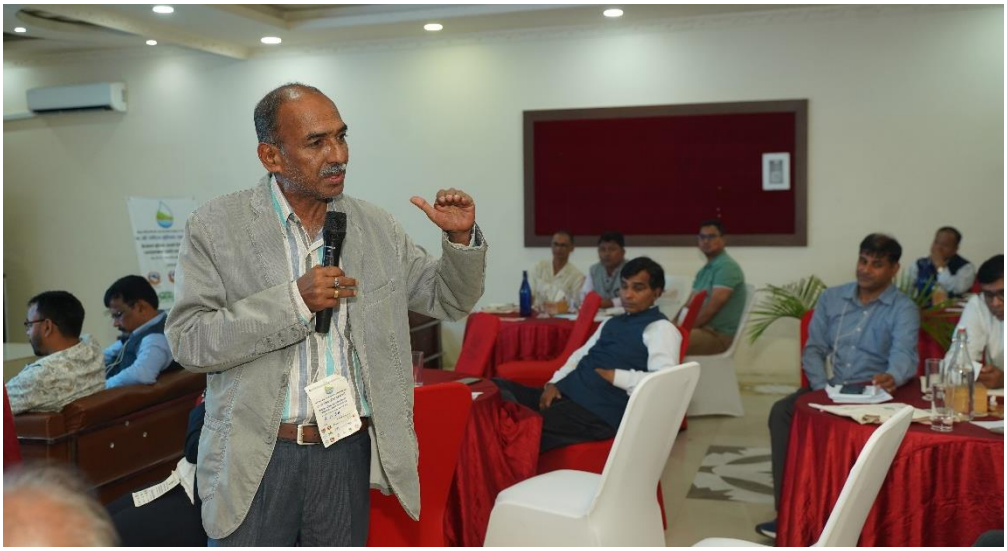
Dr. Bhesh Raj Thapa, UESC/Pokhara University



Er. Ram Kumar Khanga, Act. Secretary, MoEIWS, Madhesh Province

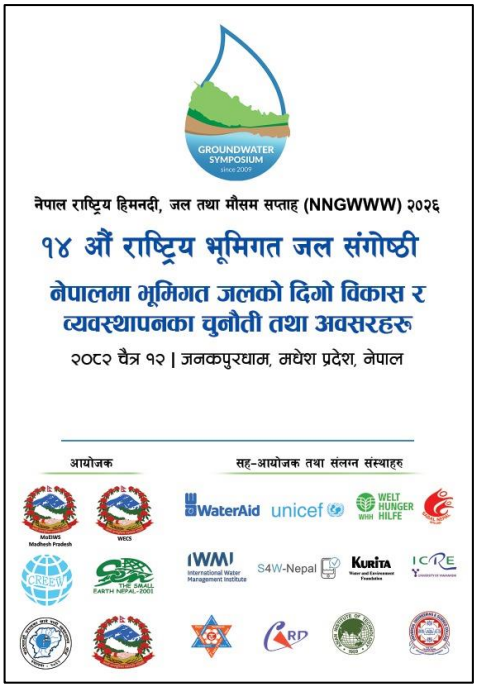


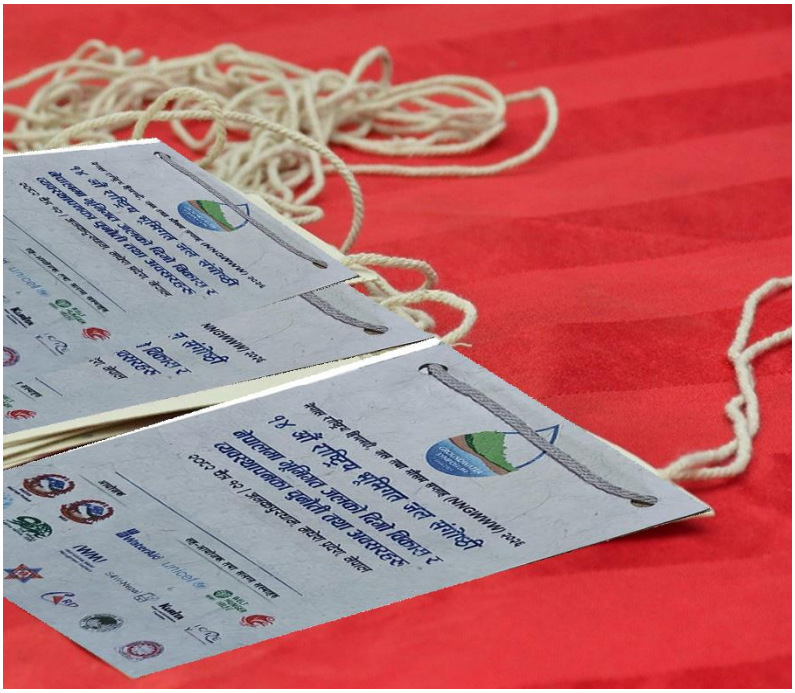
Dr. Vishnu Prasad Pandey, Professor (Water Resources), IoE, TU, Nepal

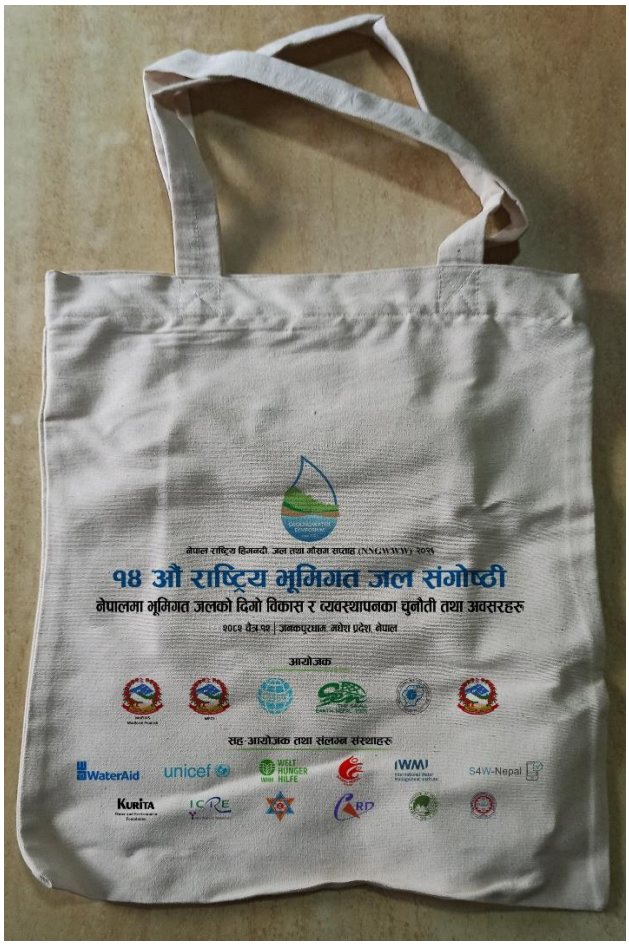


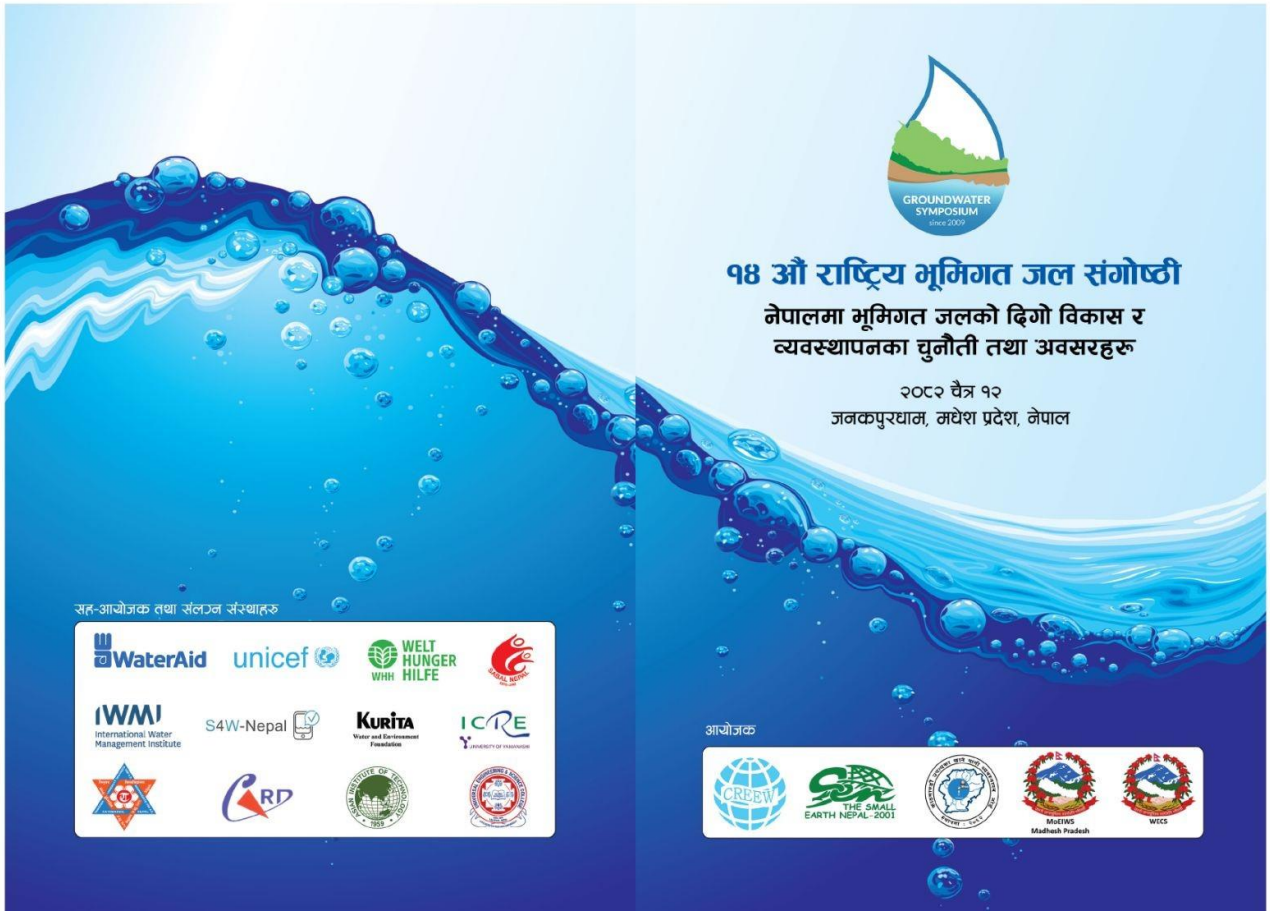
Prof. Dr. Krishna Prasad Sah, Director, Chandra Engineering Consultants, Janakpurdham

Annex V: Symposium Materials: Name Tag, Diary and Bag









Banner of the Symposium

रेडियो नेपाल
Radio Nepal Online

मधेशमा खानेपानीको समस्या समाधान गर्न भूमिगत पानीको भण्डारमा जोड

अजय कुमार झा चैत्र १२, २०८२ 29 Shares

जनकपुरधाम । सुख्खा मौसम शुरु भएसँगै मधेश प्रदेशका जिल्लाहरूमा खानेपानीको सम्भावित समस्या र त्यसको समाधानका विषयमा जलश्रोतका विज्ञहरुको सहभागितामा प्रदेश स्तरीय छलफल जनकपुरधाममा आज सम्पन्न भएको छ ।

मधेश प्रदेशका ऊर्जा, सिंचाई तथा खानेपानी मन्त्रालयको आयोजना तथा वाटर एड, युनिसेफ सहितका विभिन्न अन्तर्राष्ट्रिय गैरसरकारी संस्थाहरूको सहकार्यमा सम्पन्न भएको १४ औं राष्ट्रिय भूमिगत जल सम्मेलनमा सहभागी विज्ञहरुको भूमिगत पानीको भण्डार बढाउने अल्पकालिन, मध्यकालीन तथा दीर्घकालीन उपायकोको तीनै तहका सरकारले मिलेर काम गर्नु पर्नेमा जोड दिनु भएको हो ।

विज्ञहरुले मधेश प्रदेशका जिल्लाहरू सहितका क्षेत्रमा ८ अर्ब घन मिटर भूमिगत पानी भएको बताउँदै भूमिगत पानीको मात्रा बढाउनका लागि वर्षा तथा नदिको पानीलाई रोक्नका लागि चुरे देखि नै पानी पोखरी तथा नदिहरुमा साना साना बाँधको निर्माण गरिनु पर्ने धारणा राख्नु भयो ।

कार्यक्रममा बोल्दै मधेश प्रदेशका ऊर्जा, सिंचाई तथा खानेपानीमन्त्री जवाहर कुशवाहाले मधेश प्रदेशका जिल्लाहरूमा विगत केही वर्ष यता सुख्खाको समयमा खानेपानीमा देखिएको समस्या समाधानका लागि पुराना खानेपानीका योजनाहरू समयमा सम्पन्न हुनु पर्ने धारणा राख्नु भयो ।

उहाँले मधेश प्रदेशका जिल्लाहरूमा साना तथा ठूला गरेर करिब ४ सय ४८ खानेपानीका योजनाहरू अधुरा रहेको र त्यस योजनाहरूमा थोरै रकम लगानी गरेर सञ्चालन गर्न मिल्ने भएकाले स्वामित्व सम्बन्धि विवादको समाधानका लागि काम हुनु पर्नेमा जोड दिनु भयो ।

नेपाल सरकारका पूर्वमन्त्री एवं वातावरण विद् गणेश साहले मधेश प्रदेशमा अगामी दिनमा खानेपानीको थप संकट हुने भएकाले यहाँका पोखरी तथा जलाशयहरूलाई सौन्दर्यीकरणको नाउँमा पक्किकरण गर्ने काम रोकी बरु पुर्न जीवन दिएर माटो र पानीको सम्बन्ध रहन दिनका लागि आग्रह गर्नु भयो ।

मधेश प्रदेशका नीति तथा योजना आयोगका उपाध्यक्ष राज कुमार सिंहले मधेशमा खानेपानीको १ सय देखि २ सय फिटमा जडान भएका धापाकलहरु सुकेपनि ४ सय ५० देखि ६ सय फिटमा अहिले पर्याप्त मात्रामा खानेपानी आउने गरेको भएपनि खानेपानीको श्रोत बढाउन जरुरी रहेको बताउनु भयो ।

मधेश प्रदेशका ऊर्जा, सिंचाई तथा खानेपानी मन्त्रालयका सचिव राम कुमार खड्गको अध्यक्षतामा भएको सो कार्यक्रममा मधेशका नीति तथा योजना आयोगका पूर्व उपाध्यक्ष डा. सोहन साह, सिरहाको गोलबजार नगरपालिकाका उपप्रमुख मञ्जु साह, कर्जनहा नगरपालिकाका उपप्रमुख लक्ष्मी कुमारी श्रेष्ठ, ऊर्जा आयोगका सह–सचिव टिकाराम सुवेदी, वीरगञ्ज महानगरपालिकाका प्रमुख प्रशासकीय अधिकृत अरविन्दलाल कर्ण, संघीय खानेपानी तथा ढल निकास कार्यालय जनकपुरधामका प्रमुख मिहिरचन्द्र आचार्य, युनिसेफका अनिता मास्के, ऊर्जा, सिंचाई तथा खानेपानी मन्त्रालयका महाशाखा प्रमुख लक्ष्मी पन्त र वातावरण, ऊर्जा तथा अनुसन्धान केन्द्रका अध्यक्ष डा. ढुढीराज पाठक सहितका वक्ताहरूले भूमिगत पानीको सतह बढाउने विषयमा तीन तहका सरकारका बीचमा सहकार्य हुन जरुरी रहेको बताउनु भयो ।

MENU SEARCH THE ANNAPURNA express ApEx ePaper

HOME POLITICS SOCIETY BIZNOMY GEOPOLITICS SPORTS OPINION SPOTLIGHT

EVENT

Madhes groundwater crisis takes center stage

By: The Annapurna Express - Published: March 27, 2026, 4:16 p.m.

Scientists, policymakers, and development partners gathered at the 14th National Groundwater Symposium on Thursday to address the escalating water crisis in Madhes Province. The event, held at Hotel Mithila Yatri Niwas, comes as the region faces its first-ever officially declared drought disaster.

The symposium, themed 'Challenges and Opportunities for Sustainable Development and Management of Groundwater in Nepal', featured 149 participants from federal and provincial governments, academia, and international organizations. The event was led by the Water and Energy Commission Secretariat (WECS) and the provincial Ministry of Irrigation, Energy and Water Supply (MoEIWS), with technical coordination by the Center of Research for Environment, Energy and Water (CREEW).

Experts at the forum highlighted the severity of the current water shortage. Sanjeeb Baral, Executive Director of WECS, noted that the 2025 crisis was triggered by a monsoon that delivered only 46 percent of normal rainfall, leading to the drying of wells and boreholes across the province. "This is not merely a one-year anomaly," Baral warned. "It is part of a larger climate change trend that reveals Madhesh's deep vulnerability to shifting weather patterns."

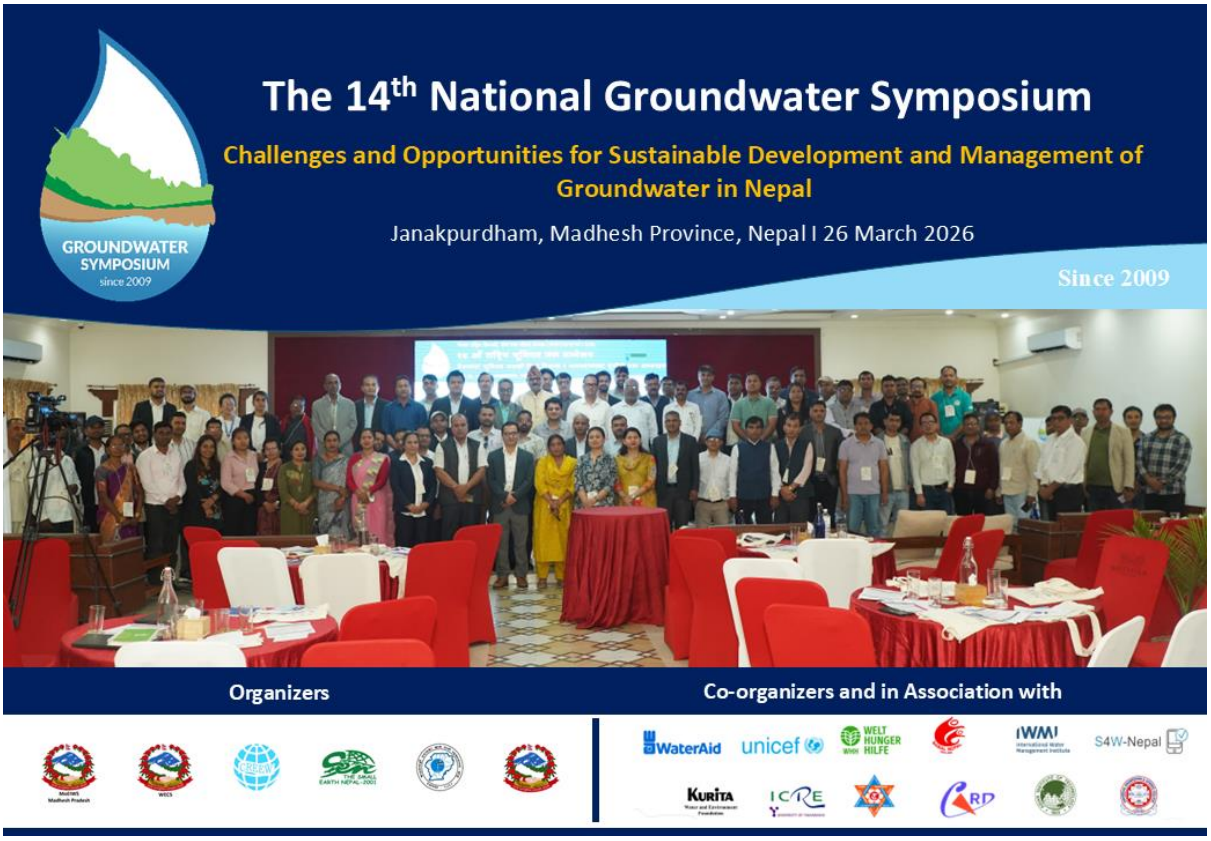
Data presented by Raj Kumar Singh, Vice-chairman of the Provincial Policy and Planning Commission, underscored the depletion: while water was once accessible at 100–200 feet, drillers now frequently must reach depths of 450–600 feet to find viable sources.

To combat the water shortage, the provincial government has outlined a three-pillar strategy centered on structural and environmental reform. This approach begins with legal reform through the drafting of dedicated provincial groundwater legislation to provide a clear regulatory framework. It further emphasizes institutional realignment to clarify the specific responsibilities of federal, provincial, and local governments, ensuring a more coordinated response. Finally, the strategy focuses on nature-based implementation, which includes restoring traditional ponds and protecting the critical Chure-Bhabar recharge zones from the impacts of unregulated mining.

Laxmi Pant of MoEIWS also advocated for the completion of the Sunkoshi-Marin Diversion Project, which aims to irrigate 122,000 hectares across six districts. Meanwhile, Manohara Khadka of the International Water Management Institute (IWMI) emphasized the need for 'water diplomacy' regarding transboundary aquifers shared with India.

The symposium highlighted significant gaps in current water management. Vishnu Prasad Pandey of Tribhuvan University noted a lack of geospatial maps and integrated databases, while Arinita Maskey Shrestha of UNICEF Nepal pointed to 'systemic failures', including low community awareness and a tendency for local governments to manage crises reactively rather than through advance planning.

In his closing remarks, Ram Kumar Khang, Acting Secretary of MoEIWS, committed to extending these technical dialogues to the district and local levels to ensure accountability.


GROUNDWATER SYMPOSIUM
since 2009
The 14th National Groundwater Symposium
Challenges and Opportunities for Sustainable Development and Management of Groundwater in Nepal
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Co-organizers and in Association with
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