

Institutionalizing Water Accounting in Egypt: Insights from Egypt Policy Dialogue at Cairo Water Week 2025

Cairo, Egypt | October 12, 2025

Fayrouz Eldabbagh and Alan Nicol

December 2025



Authors

Fayrouz Eldabbagh, National Researcher-Political Scientist, International Water Management Institute (IWMI), Cairo, Egypt (f.eldabbagh@cgiar.org)

Alan Nicol, Principal Researcher-Policy and Governance, IWMI, Addis Ababa, Ethiopia (a.nicol@cgiar.org)

Acknowledgements

This work was initiated under the CGIAR Initiative on National Policies and Strategies and finalized with support from the Governance and Political Economy—Area of Work 3 (AoW3)—of the CGIAR Policy Innovations Program. We would like to thank all funders who supported this research through their contributions to the CGIAR Trust Fund (www.cgiar.org/funders).

The authors sincerely thank the Planning Sector at the Ministry of Water Resources and Irrigation in Egypt for their invaluable support and collaboration.

CGIAR Policy Innovations Program

CGIAR's Policy Innovations Program delivers science-based evidence to strengthen policies, markets, and institutions. The initiative supports coherent policies across food, land, and water systems by analyzing policy synergies and trade-offs, the political economy of natural resources system transformation, just transition, and co-creating solutions in partnership with policy makers and think tanks for effective, impactful, and equitable policy-making.

Learn more about the program: <https://www.cgiar.org/cgiar-research-portfolio-2025-2030/policy-innovations>

Citation

Eldabbagh, F.; Nicol, A. 2025. *Institutionalizing water accounting in Egypt: insights from Egypt Policy Dialogue at Cairo Water Week 2025*. Report of the Egypt Policy Dialogue at Cairo Water Week 2025, Cairo, Egypt, 12 October 2025. Colombo, Sri Lanka: International Water Management Institute (IWMI). CGIAR Policy Innovations Program. 12p.

© 2025 International Water Management Institute (IWMI). Some rights reserved. This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0).

Front cover photo: François Molle

Disclaimer

This publication has been prepared as an output of the CGIAR Policy Innovations Program and has not been independently peer reviewed. Responsibility for editing, proofreading, and layout, opinions expressed, and any possible errors lies with the authors and not the institutions involved.

Table of Contents

Summary	3
Background	4
Objectives of the Dialogue	4
Speakers and presentations	4
Key Insights: Institutionalizing WA+	5
Key Takeaways	6
Recommendations and Action Points	6
Next Steps	6
References	7
Annex I	8

Summary

Problem: Egypt's water planning faces a persistent supply–demand gap. Therefore, it aimed at leveraging the use of water accounting frameworks, particularly Water Accounting Plus (WA+), which is a satellite-based tool aimed at assessing water consumption and water productivity across users and locations. Despite introducing a national WA unit that handles the production of water accounts, water data and monitoring remain fragmented across institutions with limited standards and protocols for sharing, quality assurance, and decision uptake. This constrains the ability of water accounting products (including WA+) to reliably inform allocation, productivity, and investment decisions across sectors and scales.

What this policy dialogue did: Convened the Ministry of Water Resources and Irrigation (MWRI), the Ministry of Agriculture and Land Reclamation (MALR), and user perspectives to examine how WA+ can be operationalized and institutionalized as a decision-support and governance tool that connects remote-sensing accounts to workflows, mandates, and practical use-cases.

Four core outcomes from the policy dialogue were discussed, including:

- A clearer institutional workflow/value chain (data inputs, quality control, interpretation, dissemination, and decision uptake) across agencies and scales.
- Key enablers and bottlenecks for sustainability (data-sharing and disclosure protocols, interoperability/standardization, resourcing and mandate of the water accounting unit, and communication of uncertainty).
- An emphasis on how WA applications constitute the basis for contested debates and negotiations among key users and sectors, particularly when we have a water supply not matching demand.
- An emphasis on the importance of socio-ecological grounded interpretation, including integrating water users' practices and local knowledge to strengthen legitimacy, equity, and usability of WA⁺ outputs.

The resulting institutional innovation proposal centers on formalizing Egypt's water accounting unit through clear legal and administrative mandates, routine production of standardized water accounts, and agreed data-sharing protocols, with the aim of strengthening legitimate, evidence-based decision-making and guiding water-related investment planning at the governorate level.

Background

Egypt faces an increasingly stark water arithmetic. Rapid population growth, urban expansion and agricultural intensification are pushing demand to around 110 billion cubic metres (bcm) a year, far above an estimated supply of 81.6 bcm (CAPMAS, 2024; MWRI, 2016). Recognizing the widening deficit, the Ministry of Water Resources and Irrigation (MWRI) established a national water accounting unit in 2019 to generate spatially explicit, standardized data on water availability, consumption, productivity and return flows (Abou Taleb, 2019).

Water Accounting Plus (WA⁺), a satellite-based tool widely used across CGIAR, offers a transparent, comparable and open-access method for measuring inflows, outflows and uses across sectors and seasons (Bassi et al., 2020; Hundertmark, 2020). Yet the country's hydrological data have historically been fragmented across agencies, governed by inconsistent standards and weak protocols for sharing, disclosure or quality assurance. Equally, formal water balances rarely capture informal practices, such as farmer-driven irrigation adjustments that shape real consumption patterns. This separation of physical accounts from social realities hampers effective water management. A system that does not acknowledge informal irrigation, farmer knowledge or local institutions cannot fully explain the persistence of water deficits (ElGhamarawy, 2021).

Against this backdrop, two CGIAR Science Programs, Policy Innovations and Scaling for Impact, working with MWRI and MALR are supporting the institutionalisation of WA⁺ in Egypt. The session at Cairo Water Week examined how WA⁺ can strengthen national and subnational decision-making by integrating biophysical, economic and social dimensions of water productivity. Building on the outcomes of the CGIAR National Policies and Strategies (NPS) initiative, The International Water Management Institute (IWMI) has worked on enhancing coherent policies across food, land, and water systems. The analysis of policy coherence rendered water productivity as the key frame governing Egypt's agrifood landscape policies.

This policy dialogue brought the technical aspects of WA⁺, drawing on IWMI's innovations from different regions. It was then complemented by focusing on the institutionalization dimension by bringing together perspectives from the Ministry of Water Resources and Irrigation and the Ministry of Agriculture, research, and water user groups to analyze its institutional framework, value chain, and workflow across scales, sectors, and users. It explored the policy drivers and bottlenecks influencing the uptake and sustainability of WA⁺ at scale.

Objectives of the Dialogue

The dialogue aimed to:

- Identify gaps and opportunities in applying WA⁺ in Egypt.
- Define steps and partnerships to embed water accounting in policy and institutional frameworks.
- Showcase regional and international experience.
- Deepen collaboration between science, policy and practice communities.

Speakers and presentations

The session brought diverse speakers representing different sectors and countries. Speakers included the former Minister of Water of Egypt and current president of the Arab Water Council, who emphasized both the technical and institutional aspects, as well as community ownership of water accounting data. The Ministry of Water Resources and Irrigation and the Ministry of Agriculture and Land Reclamation have both shared their perspectives on the different opportunities the WA⁺ tool could bring. A representative from a water user association has joined the conversation on how he perceives the water problem and what efficient water allocation means in his context. Finally, insights from Morocco and East Africa into the interpretation and utilization of water accounting data have been showcased.

Speaker	Affiliation
Dr. Hussein El-Atfy	Arab Water Council (AWC)
Dr. Heba Salman	Ministry of Water Resources and Irrigation, Egypt
Dr. Shereef Fouda	Ministry of Water Resources and Irrigation, Egypt
Dr. Ehssan El Mekkassi	Food and Agriculture Organization (FAO) Consultant, Morocco
Dr. Shereef Fouda	Ministry of Water Resources and Irrigation, Egypt

Dr. Mohamed AbdElSatar	Soil, Water, Environment Research Institute (SWERI) - Ministry of Agriculture and Land Reclamation
Prof. Khaled Abu Zeid	Arab Water Council (AWC)
Mr Abdelwahab Haddad	Water User Association Representative

Key Insights: Institutionalizing WA+

1. Integrated Data for Policy Coherence

A central theme was the need to align how different institutions define the “water problem” and the metrics they require to act on it. WA+ provides a consistent national picture of where water is, who uses it and at what value, thereby supporting evidence-based decision-making. Water accounting must be based on a practical agenda that does not treat water supply and allocation in silos from broader ecosystem conditions. It aims to link water availability to crop patterns and the water quality parameters, such as salinity, to the overall water balance assessments.

In this framework, the Ministry of Water Resources and Irrigation is using the FAO’s Water Productivity through Open-access of Remotely-sensed derived data “WaPOR”. It is a satellite-based platform that estimates evapotranspiration and water productivity at field to national scales and combines it with crop maps to derive crop-specific water consumption and water requirements, and at what value supporting more spatially explicit water planning. For MWRI, linking WAPOR data with crop maps already yields highly granular estimates, for example, a winter wheat requirement of 2,200 m³/feddan.

International experience reinforced this potential. IWMI presented water-accounting dashboards from Souss-Massa (Morocco), Amman–Zarqa (Jordan), and refugee-hosting areas in Ethiopia. These tools, now being scaled in Morocco and Uzbekistan, demonstrate how earth-observation data can enhance basin planning, improve allocation decisions and guide investment.

The Arab Water Council’s [Arab states of the water report](#), structured around WA+ indicators, showed how coherent metric bundles on availability, use and quality can underpin regional comparability and trust, particularly in transboundary contexts.

MALR and SWERI highlighted opportunities to apply WA+ for diagnosing irrigation losses, crop-water mismatches and soil-salinity risks. Combining WA+ with soil-moisture and salinity data could guide irrigation upgrades and prevent land expansion into areas lacking adequate drainage.

Speakers stressed that efficiency gains must be balanced with equity: higher crop yields and incomes per drop must also translate into more resilient livelihoods.

2. Policy Networks and Governance Across Scales

Institutionalizing WA+ is not simply a technical exercise. It requires a governance system where data are shared, interpreted and used by actors with overlapping mandates.

IWMI emphasized that WA+ is best understood not as a perfect mirror of hydrological reality but as a negotiation platform, where ministries, farmers, and value-chain actors can align decisions against a common evidence base.

The Arab Water Council underscored WA+ as both a technical and moral agenda: water data should empower communities and strengthen accountability. Farmers and water-user associations are co-producers of data, and local participation is essential for legitimacy and long-term adoption.

Cross-ministerial collaboration emerged as a recurring challenge. Both MWRI and MALR called for standardized protocols, transparent data-sharing rules, and integrated data systems. Linking hydrological data with agronomic, economic, and social indicators would help close the gap between national planning and realities on the ground.

Regional bodies can reinforce this by providing harmonized indicators, capacity building, and independent reference points for cross-country comparisons that are critical where transboundary concerns heighten skepticism about national reporting.

Key Takeaways

- Strengthen mechanisms for cross-institutional data sharing and coordination.
- Link WA⁺ with socio-ecological realities, especially farmer practices and community action.
- Embed WA⁺ outputs in decisions on cropping patterns, productivity, soil salinity and irrigation upgrading.
- Invest in sustained capacity development across ministries and governorates.

Recommendations and Action Points

Participants called for a national framework to embed WA⁺ within Egypt's water-governance apparatus. This includes:

- **Systematic Data Sharing:** Clear protocols for how ministries, research institutions and user groups collect, access, validate and use WA⁺ data.
- **Defined Mandates:** Clarifying responsibilities across governance levels, from ministry units to irrigation districts and Water Users Associations (WUAs) - organizations of farmers and water users that manage and coordinate water use at the canal or community level and represent users' interests and constraints in interaction with MWRI.
- **Joint Interpretation Platforms:** Regular forums where ministries, farmers and researchers co-interpret WA⁺ findings to guide allocation, investments and salinity-management decisions.
- **Local Legitimacy:** Embedding water-user associations in data generation and validation to ensure WA⁺ outputs reflect real water-use practices and distributional concerns.

Taken together, these steps would transform WA⁺ from a technical product into a widely trusted tool for negotiation, planning, and investment.

Next Steps

As part of the CGIAR Science Program on Policy Innovations, key informant interviews will be conducted with water institutions and user groups to:

- identify priority data needs;
- clarify institutional roles for WA⁺ implementation;
- explore options for cross-institutional data-sharing;
- define the role of local institutions and WUAs;
- assess the feasibility of a cross-coordinating WA⁺ unit; and
- identify potential decision-making changes resulting from improved water accounting.

The resulting institutional innovation proposal will focus on operationalizing WA⁺ data through legitimate, evidence-based decision processes and guiding investment planning in governorates.

References

- Abou Taleb, M. (2019). Water Accounting as an Approach for Water Scarcity Management in the Arab Republic of Egypt. *Egyptian Journal of Agricultural Economics*.
https://www.researchgate.net/publication/344474763_Water_Accounting_as_an_Approach_for_Water_Scarcity_Management_in_the_Arab_Republic_of_Egypt_-_Egyptian_Journal_of_Agricultural_Economics_almhasbt_almayyt_kmdkhl_ladart_ndrt_almyah_fy_jmhwyrt_msr_alrby
- Bassi, N., Schmidt, G., & de Stefano, L. (2020). Water accounting for water management at the River Basin scale in India: Approaches and gaps. *Water Policy*, 22(5), 768–788. Scopus.
<https://doi.org/10.2166/wp.2020.080>
- CAPMAS. (2024). *Egypt in Figures (Water)*.
https://www.capmas.gov.eg/Pages/Publications.aspx?page_id=5104&Year=23532
- ElGhamrawy, M. (2021). *Rapid Water Accounting for Malawi Site in Al Minya, Egypt*.
<https://openknowledge.fao.org/server/api/core/bitstreams/5047e7a9-d9e2-45b0-ad33-8916e1830c6f/content>
- Hundertmark, W. (2020). *Making Water Accounting Operational: For Informing Improved Agricultural Water Management - From Concept to Implementation : A Synthesis Report*.
<https://policycommons.net/artifacts/1255285/making-water-accounting-operational/1820686/>
- MWRI. (2016). *Water Resources Development and Management Strategy 2050*.
https://www.mwri.gov.eg/?page_id=11460

Annex I

Time	Speaker	Focus	Main points	Moderator
5 mins 15:00-15:05	Moderator	Welcome and framing	<ul style="list-style-type: none"> Outline session objectives Set the context: why water accounting matters for Egypt's water future Introduce speakers and flow 	Dr. Youssef Brouziyne
5 mins 15:05–15:10	Dr. Hussein El-Atfy Secretary General, Arab Water Council (AWC)	Keynote speech: Egypt's leadership in water management and allocation, and role of WA	<ul style="list-style-type: none"> linking WA+ to Egypt's historical leadership in water allocation 	
5 mins 15:10–15:15	Dr. Heba Salman (MWRI representative)	Keynote speech: National perspective: Water accounting and strategic priorities in Egypt	<ul style="list-style-type: none"> Status of water accounting in Egypt National vision and strategic priorities for WA+ Institutional drivers and enabling policies 	
10 mins 15:15–15:25	Dr. Shereef Fouda , MWRI	Presentation: WA+ implementation in Egypt	<ul style="list-style-type: none"> What is the current status of WA+ implementation in Egypt? How widely has the WA+ framework been adopted so far? Where does Egypt stand on WA+ — which sectors are applying it, and what are the key challenges ahead? 	Dr. Muhammad Khalifa
10 mins 15:25–15:35	Dr. Ehsan El meknassi Consultant, Morocco	Presentation: Regional perspective: Role of in-country research institutions; insights from piloting WA+	<ul style="list-style-type: none"> FAO's experience in mainstreaming WA+ in Morocco. Success factors and challenges faced. Key lessons that can inform Egypt's approach. 	
5 mins 15:35 – 15:40	Dr. Muhammad Khalifa IWMI	Presentation	<ul style="list-style-type: none"> CGIAR's Scaling of Impact IWMI's experiences from Jordan, DIWASA 	
5 mins 15:40 – 15:45	Ms. Fayrouz Eldabbagh IWMI	Presentation	<ul style="list-style-type: none"> CGIAR initiative on policy innovations Objectives of research 	
Panel session (15:45-16:15)				

	<p>Panel discussion (Round 1)</p>	<p>Round 1: 4 mins for each speaker Purpose: Discuss how different institutions “see” the water problem, what evidence-based data and metrics would make WA+ meaningful for each institution, and how WA+ ensures that smallholder and community-level realities are represented in national planning</p> <ul style="list-style-type: none"> • Dr. Shereef Fouda – MWRI <ul style="list-style-type: none"> ○ Which policy or planning decisions currently lack reliable accounting data? How do you envision linking water metrics with socio-ecological realities on the ground (ex., small/large farms, technology adoption, salinity, pollution, climate patterns)? • Dr. Mohamed Saad Abd El-Satar - SWERI/MALR <ul style="list-style-type: none"> ○ From your Ministry’s perspective, how do you interpret the outputs presented in the WA+ analysis? How can WA+ outputs be aligned with agricultural planning and soil-water management needs? How do you envision linking water metrics with socio-ecological realities on the ground (ex., small/large farms, technology adoption, salinity, pollution, climate patterns)? • Prof. Khaled Abu Zeid - Arab Water Council (AWC) <ul style="list-style-type: none"> ○ What data inputs do you expect from WA+ and other models to inform decision-making? How can WA+ integrate drainage, reuse, and wastewater dimensions to reflect Egypt’s real water balance? 	<p>Dr. Muhammad Khalifa</p>
	<p>Panel discussion (Round 2)</p>	<p>Round 2: 4 mins for each speaker Purpose: Identify institutional actors, mandates, and interdependencies.</p> <ul style="list-style-type: none"> • Dr. Shereef Fouda – MWRI <ul style="list-style-type: none"> ○ How feasible is it to host WA+ as an inter-ministerial task force? What legal or protocols would be needed? Which departments and agencies should be engaged, and what role do they play? What are your expectations for cross-institutional data-sharing mechanisms on water accounting? What challenges – legal, budgetary, cultural - do you foresee in establishing a cross-coordination unit for WA+? • Dr. Mohamed Saad Abd El-Satar - SWERI/MALR <ul style="list-style-type: none"> ○ What <u>incentives or mandates</u> would encourage data-sharing and co-ownership across ministries? Which departments and agencies should be engaged, and what role do institutions play? What risks (resistance, data ownership, inter-agency competition) should be anticipated? • Prof. Khaled Abu Zeid - Arab Water Council (AWC) <ul style="list-style-type: none"> ○ How can regional actors help legitimize and operationalize WA+ outcomes? What lessons from regional cooperation could guide Egypt’s institutionalization of WA+? How do you expect WUAs actors to be integrated in water planning and reflecting the effectiveness of WA+? 	<p>Ms. Fayrouz Eldabbagh</p>
<p>16:15– 16:20</p>	<p>Mr. Abdelwahab Mohamed Elhaddad - Water User Association (WUA)</p>	<p>End-user perspective: how water allocation decisions affect communities and</p> <ul style="list-style-type: none"> • How water allocation decisions affect communities • Community needs for transparency and fairness 	<p>Dr. Youssef Brouziyne</p>

		agriculture and end community needs	<ul style="list-style-type: none"> • Opportunities for inclusive water governance 	
16:20-16:25	Open floor	Reflections and Q&A	<ul style="list-style-type: none"> • Audience reflections on national, regional, and end-user perspectives • Opportunities for cross-sector collaboration 	
16:25-16:30	Moderator and Dr. Heba Salman - Co-convener (MWRI representative)	Synthesis & next steps	<ul style="list-style-type: none"> • Summary of key takeaways • Actionable next steps for Egypt • Pathways for regional collaboration and scaling 	



CGIAR is a global research partnership for a food-secure future. CGIAR science is dedicated to transforming food, land, and water systems in a climate crisis. Its research is carried out by 13 CGIAR Centers/Alliances in close collaboration with hundreds of partners, including national and regional research institutes, civil society organizations, academia, development organizations and the private sector. www.cgiar.org

To learn more about this program, please visit:
<https://www.cgiar.org/cgiar-research-portfolio-2025-2030/policy-innovations>

Contact

Fayrouz Eldabbagh, National Researcher-Political Scientist, IWMI, Cairo, Egypt (f.eldabbagh@cgiar.org)