

Date: Tue, Sept 22; Time:14:30–15:30

Session Theme:

Global Water Leaders' Plenary I: Integrated Management of Water, Food & Energy

Keynote Speaker: Mara K. Warwick, Regional Practice Director for Agriculture, Water and Environment and Social Practice groups, South Asia, World Bank

Title of the talk: Mobilizing Public and Private Finance for the Integrated Management of Water, Food & Energy

Talking Points (Time allocated: 10 minutes)

1. Opening: Why Water, Food and Energy Must Be Managed Together

Few countries illustrate the water-food-energy nexus more clearly than India. Every decision on irrigation affects groundwater; every unit of energy used for pumping affects water sustainability; and every investment in water security influences agricultural productivity, jobs, and economic growth. Water is essential for agriculture and energy production; energy is needed to pump, treat, and distribute water; and agriculture is both the largest user of water and an increasingly important consumer and producer of energy. Yet our financing systems continue to treat these sectors separately.

Today, water insecurity is emerging as one of the greatest risks to economic growth, food security, climate resilience, and job creation. Water underpins an estimated 1.7 billion jobs globally, but billions still face inadequate water services, increasing climate shocks, and growing competition for scarce resources. The consequences are stark. Public investment alone will not be enough to address these challenges. We need a new financing paradigm that mobilizes public finance, crowds in private capital, and aligns incentives across water, food, and energy systems.

2. The Financing Challenge

The scale of the financing gap is enormous.

Globally, water financing needs are measured in trillions of dollars, while public budgets remain constrained. Water receives only a small share of public expenditure and less than four percent of global climate finance. Approximately 90 percent of water-sector investment still comes from governments and public entities, while private investment remains very limited.

This is not simply a funding gap — it is a structural misalignment. The sectors that are most interdependent are financed as if they were independent. The challenge is therefore not simply about finding more money. It is about:

- Using public resources more strategically.
- Creating bankable projects.
- Building institutions that can attract investment.

- Reducing risks that prevent private participation.
- Creating predictable revenue streams and incentives.

Public finance must increasingly act as a catalyst rather than the sole source of financing.

3. Water Forward: A New Approach

This new approach is at the heart of the World Bank Group's **Water Forward** initiative. Water Forward aims to improve water security for up to one billion people by 2030 through three pillars:

- Water for People
- Water for Food
- Water for the Planet

The central premise is that water security is not only a social and environmental objective. It is also an economic growth agenda and a jobs agenda. Water Forward seeks to help countries develop ambitious reform and investment programs while leveraging public resources to mobilize private and commercial capital. Critically, Water Forward is designed to be operationalized through concrete lending, leveraging, and partnership — not as a framework alone. The examples I will share today reflect that operational ambition.

4. Agriculture: The Largest Opportunity for Integrated Finance

The water-food-energy nexus is nowhere more visible than in agriculture. Agriculture accounts for roughly 70 percent of freshwater withdrawals globally and close to 90 percent is used in India for agriculture. At the same time, food demand is rising, climate risks are intensifying, and groundwater depletion is accelerating in many regions.

The World Bank Group's **AgriConnect** initiative recognizes that rural transformation requires integrated investments in multiple areas. It seeks to support hundreds of millions of farmers through coordinated IBRD, IFC, and MIGA (The World Bank Group) engagement while mobilizing significant private capital into agricultural value chains.

The goal is not merely to increase agricultural production. It is to create resilient food systems, better jobs, stronger rural economies, and more sustainable water use.

5. Turning the Nexus into Operations: The UP-AGREES Example Let me give you a concrete example of what integrated finance looks like in practice.

The UP-AGREES project — Uttar Pradesh Agriculture Growth and Rural Enterprise Ecosystem Strengthening — is a \$325 million World Bank operation in India. It is designed to benefit one million producers across Eastern Uttar Pradesh and the Bundelkhand region, two of the most climate-vulnerable and water-stressed agricultural landscapes in South Asia.

What makes UP-AGREES compelling is how it embeds the water-food-energy nexus directly into the project design:

- On water: The Agriculture and Water Practice Groups of the World Bank through a combination of trust fund grant, loan investments and operational innovations are working together to incorporate micro irrigation in agri-food cluster development initiatives. The UP-Accelerator initiative of the Water Practice has helped scale up micro-irrigation fivefold and expand direct-seeded rice tenfold — a practice that uses significantly less water than conventional paddy cultivation.
- On energy and climate: It promotes low-methane rice varieties and the conversion of rice residue into biogas, reducing greenhouse gas emissions by 60 percent compared to business as usual.
- On food and income: It connects farmers to digital platforms for weather forecasts, soil data, market prices, and expert advisory — improving both productivity and resilience.
- On private finance: The project explicitly targets \$15 million in mobilized private investment, demonstrating how a public lending operation can act as a catalyst for commercial capital.

This is what a genuinely integrated nexus investment looks like — not three parallel project components, but one system where water efficiency, clean energy, food security, and private sector engagement reinforce each other.

A complementary illustration comes from Punjab's Save Water, Earn Money - **“Pani Bachao, Paise Kamao”** initiative supported by the Bank, which highlights the power of incentive-based public finance. By rewarding farmers for saving electricity and groundwater, the program demonstrates how governments can shift from subsidizing resource consumption to financing resource conservation. Such approaches improve water security, strengthen fiscal sustainability, and create opportunities for private investment in efficient irrigation, solar technologies, and digital agriculture solutions.

In Haryana, Mera Pani, Meri Virasat scheme incentivized farmers to shift from water-intensive paddy into maize, cotton, or pulses, reaching almost 50,000 farmers. To support the scheme, the government also strengthened procurement and market linkages for these alternative crops, helping farmers identify buyers for their crops. The pairing of water conservation incentives and market development support illustrates a core design principle for such integrated investments.

This illustrates a broader lesson:

When policies, finance, and technology are brought together, sustainability and profitability can reinforce each other rather than compete. The three examples I just mentioned illustrate the same broader principle: when policies, finance, and technology are deliberately aligned across water, food, and energy, sustainability and profitability reinforce each other rather than compete.

Additional project examples such as the **Water Secure Haryana Program, Accelerated Development of Minor Irrigation in West Bengal** and the **Bihar Water Security and Irrigation Modernization Project** are showing how integrated water resource management, climate-smart agriculture, digital water management, and private sector partnerships can be combined within large public investment programs.

These programs, alongside UP-AGREES, represent a growing South Asian portfolio that operationalizes the nexus at scale.

7. What Needs to Happen Next

To scale impact, five priorities are essential:

First, strengthen policy and regulatory frameworks that encourage efficient water and energy use.

Second, invest in data, digital systems, and water accounting to improve decision-making and transparency.

Third, use public finance strategically to de-risk investments and crowd in private capital.

Fourth, support innovative business models, including farmer organizations, irrigation service providers, solar irrigation enterprises, and water reuse markets.

Fifth, move from isolated projects to integrated systems approaches that simultaneously address water, food, energy, climate, and jobs.

The UP-AGREES model demonstrates that all five of these priorities can be advanced within a single operation. That is the ambition we should hold ourselves to.

8. Closing Message

The future of water security will not be financed through public budgets alone.

Nor can private capital solve these challenges by itself.

The answer lies in partnership: governments creating the right enabling environment, development institutions reducing risks and building capacity, and private investors bringing innovation, efficiency, and scale.

If we can align public policy, public finance, private investment, and technology around the integrated management of water, food, and energy, we can deliver a future that is more resilient, more prosperous, and more sustainable for people and the planet.

The project examples that I have described today are not aspirational case studies — they are live operations, active programs, and proven approaches already delivering results for millions of farmers and communities. Our task now is to move from proof of concept to scale. If we align public policy, public finance, private investment, and technology around the integrated management of water, food, and energy, we can deliver a future that is more resilient, more prosperous, and more sustainable for people and the planet.

Thank you.