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International Commission on Irrigation and Drainage (ICID)



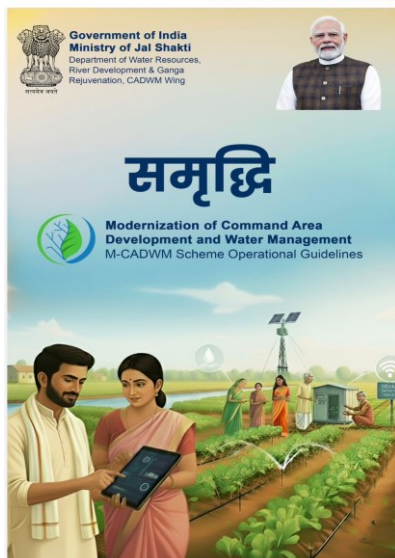
Mr Yogesh Paithankar
Member (WP&P), Central Water Commission
India

**A Government initiative towards efficient Water
Use in Agriculture - Modernization of Command
Area Development and Water Management**

2nd Indo Global Irrigation Summit

24-25 June 2026, New Delhi India

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A Government initiative towards efficient Water Use in Agriculture - Modernization of Command Area Development and Water Management



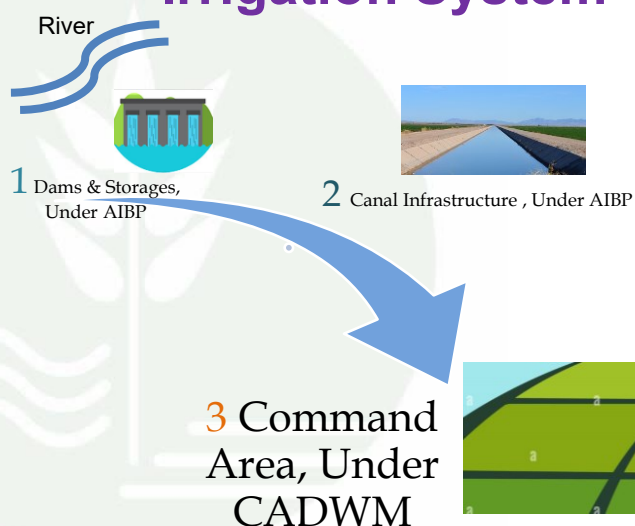
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Irrigation System

- ▣ Agriculture uses ~80% of India's freshwater
- ▣ Water productivity is **low**
- ▣ **Little** tail-end delivery
- ▣ Dam & Canal infrastructure majorly completed
- ▣ **Investments in CADWM** works is the need of hour
- ▣ Area of Focus - **Improve delivery, boost productivity & sustainability**



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Background

- **1974 – Launch of CAD Programme:**
- **2016 – Integration with PMKSY-AIBP:** CADWM restricted to 85 prioritized AIBP projects.



Land Acquisition Issues



Inefficient Water Delivery



Limited Upland & Undulating Coverage



Low Water Use Efficiency

Challenges

2025 – Launch of MCAD: Introduced to overcome limitations of traditional systems with modern infrastructure, technology, and governance models.

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M-CADWM

Target vision



PDN



Time bound



Equitable distribution

Every drop is used



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Core Action Points in M-CADWM

Driving Efficiency, Participation, and Innovation

- ❑ **Cluster-based Approach:** Command areas divided into clusters of 50–5000 ha, each governed by Water User Societies (WUS) for efficient management.
- ❑ **Pressurized Piped Irrigation Network (PPIN):** Piped systems eliminate land acquisition issues, reduce losses, and provide volumetric data on water usage.
- ❑ **Participatory Governance:** Irrigation management transferred to WUS, with women's representation and integration with Farmer Producer Organizations.
- ❑ **Irrigation as a Service (IaaS):** Contractors transformed into long-term Irrigation Service Providers (ISP), ensuring reliable delivery at the farm gate.
- ❑ **Innovation & Technology:** Use of IoT, SCADA, satellite data, and startups for real-time monitoring and efficiency gains.

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Key Reforms under M-CADWM

Infrastructure • Water Accounting • Management

- ❑ **Infrastructure Modernization:** Pressurized piped irrigation from canals to farms, boosting overall efficiency from 35% to 50% and enabling micro-irrigation.
- ❑ **Water Accounting:** Introduction of volumetric measurement, water audits, and satellite-based monitoring to ensure transparency and accountability.
- ❑ **Management Reform:** Creation of clusters, participatory Water User Societies (WUS), and long-term service contracts with Irrigation Service Providers (ISP).

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MCAD PROGRAM

Vision: To achieve **efficient**, **equitable**, and **sustainable** irrigation service delivery **supporting agriculture and rural development**.

- ▣ Launched in APRIL 2025 with Rs. 1600 crore outlay
- ▣ Phase I by MARCH 2026. FOR Development of Pilot projects across agro-climatic zones
- ▣ Combines infrastructure, water accounting & MANAGEMENT reforms
- ▣ Target: Raising on-farm water efficiency to 75% (vs ~35% now)



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MCAD Vision & Objectives: Transforming Irrigation for Sustainable Agriculture



Water Use Efficiency

Achieve 75% on-farm water use efficiency through pressurized piped irrigation networks, reducing losses and saving resources.



Participatory Governance

Empower Water User Societies (WUS) to manage irrigation, ensuring transparency, accountability, and long-term sustainability.



Integration & Innovation

Leverage micro-irrigation, IoT, SCADA, and satellite technologies for better water accounting and efficient farm-level delivery.



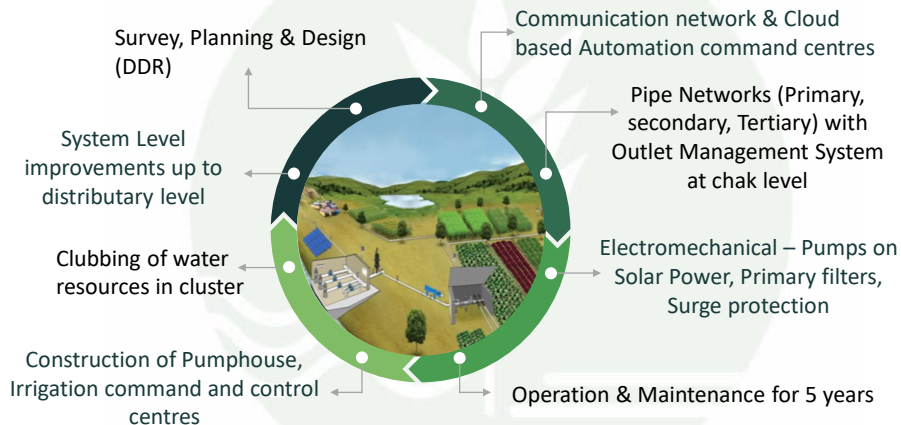
Rural Development Impact

Boost agricultural productivity, rural livelihoods, and food security while aligning with Atmanirbhar Bharat objectives.

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M-CADWM Components: Structural Components

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M-CADWM Components: Non - Structural Components

Participatory Transformation



State Level –
SPMU, Training
Centres, Demo
plots

WUS Level – Matching grant up to
max 50 lakh to WUS, FRA for
Capacity Building, Awareness and
convergence of Govt. schemes,
Handholding support for linking
FPO/FPC, Gender mainstreaming

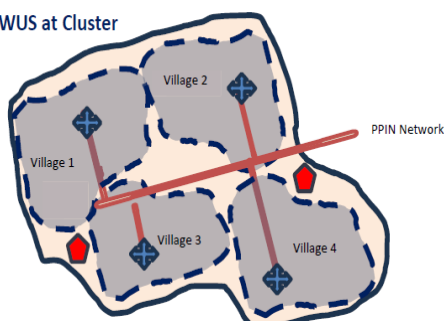
Credit
support for
PPP Model

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Cluster-Based Implementation Model

WUS at Cluster



- ☐ 50–5000 ha clusters; optimal ~4000 farmers
- ☐ Integrated water resource use (canal + groundwater + reuse)
- ☐ Standardised designs
- ☐ Better governance & accountability
- ☐ Dedicated development unit per cluster

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Performance Incentives & Target Dates

MCAD Milestones 2025–2031

- ☐ **Performance Linked Incentives (PLI):** States and Water User Societies rewarded for early completion, high service standards, and efficiency gains.
- ☐ **Pilot Projects Completion:** All Phase I pilot projects, including transfer of irrigation management to WUS, targeted by 31 March 2026 (Extended upto 30 Sept 2026)
- ☐ **Five-Year Handholding:** O&M support and capacity building for WUS till 2031, ensuring smooth transition and sustainability.
- ☐ **National Program Rollout:** Based on pilot learnings, a nationwide MCAD program will commence on 1 April 2026 under the 16th Finance Commission.

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Steering & Monitoring Framework

National, State, and District Level Governance



National Level

Empowered Committee under Secretary (Water Resources) with CWC, CGWB, NITI Aayog, Agriculture & Rural Development reps. Oversees project approvals, SoPs, and convergence.



State Level

State Steering Committee led by Chief Secretary with nodal departments and SPMU for governance, oversight, and coordination.



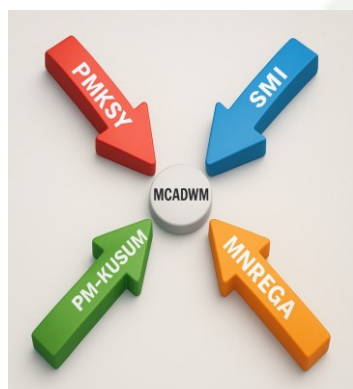
District & Cluster Level

District MCAD Committees under Collectors integrate WUS with local bodies. WUS audited annually by state and periodically by Centre.

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Convergence of Other Govt Schemes



Area-based: Physical convergence

- PMKSY (Per Drop More Crop) – for micro-irrigation subsidies.
- SMI – Integrating resources
- PM-KUSUM – solar pumps for energy efficiency.
- MGNREGA & RRR (PMKSY) – for farm ponds & recharge structures.

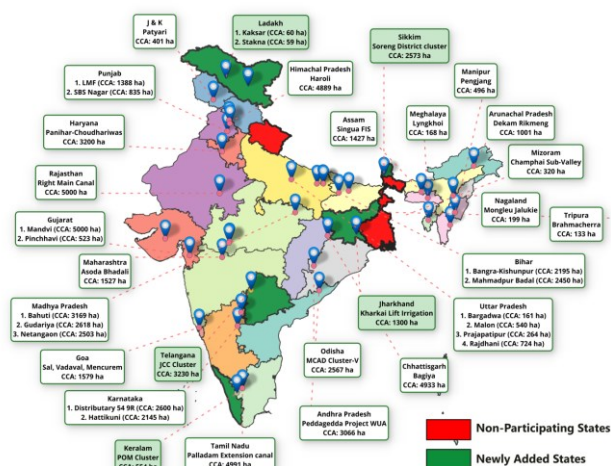
Through Joint DO with Secretaries

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Participated States in M-CADWM



- Total States / UTs = 28 Nos
- Total Clusters = 38 Nos
- Total Area = 71,858 Ha
- Keralam cluster – Approval pending (due to Election)
- Non participated States/UTs = **West Bengal, Uttarakhand and A&N**
- Two clusters from Uttar Pradesh are dropped

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Transformational Outcomes for Agriculture & Society

- ❑ **Employment Generation:** Direct beneficiaries: 80,000 farmers; indirect beneficiaries: ~4 lakh.
- ❑ **Make in India Boost:** Encourages domestic manufacturing of irrigation systems, automation technologies, and farm equipment.
- ❑ **Water & Energy Savings:** water saving and reduced ground water use.
- ❑ **cultural Growth Engine:** Cluster-based approach promotes 'One Cluster – One Crop', enhancing productivity, market linkages, and food security.

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MCAD : Sustainable Irrigation for Atmanirbhar Bharat

- ❑ **Water Security for Agriculture:** MCAD ensures efficient and equitable water distribution, reducing dependence on groundwater and improving resilience.
- ❑ **Empowered Rural Communities:** Through Water User Societies and participatory governance, farmers become stakeholders in sustainable irrigation management.
- ❑ **National Development Goals:** MCAD aligns with Atmanirbhar Bharat, Make in India, and PMKSY objectives, contributing to food security and rural growth.
- ❑ **Scalable National Model:** Pilot learnings will guide nationwide rollout post-2026, establishing MCAD as a benchmark for integrated water management.

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Thank You



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