

International Workshop on Modernizing Irrigation Services for Water, Food, and Nutrition Security

(01 September 2019, 14:00-18:15 hours)
Bali, Indonesia



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Agenda – Session 1

Time (Hrs.)	Session – Particulars
14.00-14.10	Welcome and introduction by VPH Ian Makin, Chair, WG-M&R
14.10-14.25	Using smart water operation center (SWOC) for better water management in Thailand. <i>By Chaiwat Prechawit, Thanet Somboon, Lerboon Udomsap</i>
14.25-14.40	Modernization of irrigation system with ICT, big data, and machine learning technology in Korea. <i>By Han-Joong Kim, Won-Ho Nam, Hae-Do Kim, Kwang-Ya Lee, Jae-Ju Lee, Young Hwa Kim, Seung-Hwan Yoo, Kwang-Sik Yoon</i>
14.40-14.55	Practical evaluation of ICT smart automated sluice gate for paddy fields from the aspect of an additional function of ponding water temperature control. <i>By Masaomi Kimura, Wenpeng Xie, Katsunori Shimomura, Takeshi Tsuji and Kiichiro Katsumata</i>
14.55-15.10	Innovative initiatives in water stressed area by effective monitoring of canal operations. <i>By Dr. Riaz Muhammad, Kamran Muhammad</i>
15.10-15.25	Re-visiting the rap evaluation for irrigation modernization: concept and application for small-scale irrigation. <i>By Maher Salman, Eva Pek</i>
15.25-16.00	Discussion with questions from audience



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Agenda – Session 2

Time (Hrs.)	Session – Particulars
16.15-16.30	Automatic subsurface irrigation and drainage using sheet-pipe typed mole drain. <i>By Budi Indra Setiawan, Salyanto Kido Sapitmo, Chusnul Arif, Hiroshi Matsuda, Koremasa Tamura, Youichi Inoue</i>
16.30-16.45	A case study on conversion of canal-based irrigation network system to pressurized pipe based network system integrated with solar plant in the state of Uttar Pradesh, India. <i>By Sabarna Roy, Rajat Chowdhury</i>
16.45-17.00	Sub-surface water level control system "FOEAS" and its diffusion <i>By Tatsumi Tomosho and Noburo Haraguchi</i>
17.00-18.00	Discussion and questions with audience
18.00-18.15	Wrap-up and closing remarks by Chair



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Workshop on Modernizing Irrigation Services

- Objective
 - Listen to latest papers and case studies on Modernization
 - Exchange experiences
 - Consider working definition of Modernization
 - Advise Working Group on Modernization and Revitalization on next steps to "state-of-the-art" publication



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Modernization is the:

"Process of upgrading infrastructure, operations and management of irrigation and drainage systems to sustain the water delivery service requirements of farmers and optimize production and water productivity."

Source: email exchange - Lance Gore, Arnaud Cauchois (ADB), Beau Freeman, Mike Chegwin (Lahmeyer), Ian Makin (IWM) September 2015 and subsequent WG-M&R discussions



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Modernization is further clarified as:

- **"process"** means that **modernization** of systems **is a continuous exercise**. This must account for future changes in the irrigation and drainage system and service requirements of the farmers. Ideally the process will align with existing government development and budgetary timeframes and systems;
- **"upgrading"** means **improving beyond what is existing; not simply replacing or rehabilitating**. It means applying design best practices to infrastructure to optimize operation requirements and maximize system performance and efficiencies;



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Modernization is further clarified as:

- **"infrastructure"** means **all physical assets related to the irrigation and drainage system** including headworks, conveyance systems, drainage systems, monitoring systems, communication systems, farm and access road networks, operation buildings etc.;
- **"operations and management"** means **all human resources and management processes** responsible for managing, operating and maintaining the irrigation and drainage system including ground and surface water management, and the associated physical infrastructure.



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Modernization is further clarified as:

- **"irrigation system"** encapsulates **all physical and non-physical components** that contribute to convert water and nutrients into food and fiber. This includes the infrastructure, water resources, agency staff, farmers, services providers, supply and market chains, etc.;
- **"sustain"** means that the irrigation and drainage **system will continue to operate at its optimal performance**. This includes managing the water resources to account for reallocations to other users, prevent adverse depletion, and enhance resilience to climate variability and adverse impacts anticipated from climate change. It also means **ensuring that all costs relating to management, operation, maintenance, and asset depreciation of the system are affordable** and are fully covered through either government, user (farmer), or private sector financing.;



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Modernization is further clarified as:

- **"water delivery service requirements of the farmers"** means **ensuring reliable, adequate and flexible supply of water as agreed with farmers** allowing them to maximize water and agricultural productivity. This requires farmers to be involved in planning, design and operation of the irrigation system, and in routine water management decisions;
- **"to maximize production and water productivity"** means **farmers** must endeavor, and be supported through technology transfer and extension services, to **optimize the productivity of their land with the available water**.



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Case studies presented to WG-M&R (2015-2018)

Title	Country	Presented in
Definition of Modernization	UK	Montpelier 2015
FAO Modernization (Thierry Facon)	FAO	Montpelier
ICID Modernization (Harish Varma)	ICID	Montpelier
Modernization and Rehabilitation of Irrigation In Indonesia	Indonesia	Chiang Mai 2016
Workshop Survey Summary Of Modernization		Chiang Mai
Modernization of Irrigation Schemes Through Training of Water User Associations in the Rapid Intervention Program	USA	Chiang Mai



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Case studies presented to WG-M&R (2015-2018)

Title	Country	Presented in
Planning for Modernization Investments – Consultant Lessons (Beau Freeman)	USA	Chiang Mai
Modernization and Revitalization of Irrigation in Pakistan- A case study of Sindh	Pakistan	Chiang Mai
Investments in Improved Irrigation Services (Lance Gore)	ADB	Chiang Mai
A case study of Jiamakou Yellow River Diversion Project Shanxi Province, China	China	Mexico 2017
Irrigation Modernization and Revitalization in Korea	Korea. Rep of	Mexico 2017



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Case studies presented to WG-M&R (2015-2018)

Title	Country	Presented in
Modernization and Revitalization of Irrigation in Pakistan- A case study of Sindh	Pakistan	Mexico 2017
Rehabilitation and Revitalization of Irrigation Schemes in Nigeria: Lessons from Bakolori Irrigation Scheme	Nigeria	Mexico 2017
Case study of irrigation modernization in northern victoria	Australia	Mexico 2017
Modernization & Revitalization—a case study of Japan	Japan	Canada 2018



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Case studies presented to WG-M&R (2015-2018)

Title	Country	Presented in
Canal Automation for Irrigation Delivery Systems	USA	Canada 2018
Irrigation modernization with IoT and cloud-top computing: case study in Taiwan	ICID- Chinese Taipei Committee	Canada 2018
Modernization of the San Luis Canal Company in Central California	USA	Canada 2018
Tertiary Infrastructure Development in the Muda Area (National Key Economic Area [NKEA] – Entry Point Project [EPP]10)	Malaysia	Canada 2018



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