



Upgrading Irrigation Facilities and Promotion of Farmers' Participation towards Smart Water Management

Naw May Mya Thin¹, Dr. Maung Maung Naing²

¹ Staff Officer, Department of Irrigation and Water Utilization Management,
Ministry of Agriculture, Livestock and Irrigation

² Deputy Director, Department of Irrigation and Water Utilization Management,
Ministry of Agriculture, Livestock and Irrigation



Outlines

- Introduction
- Background
- Some Projects those have been implementing in Myanmar
- Prospective



Introduction

The uses of water can be broadly divided into domestic, agricultural and industrial uses. **The main portion of water is used for irrigation.**



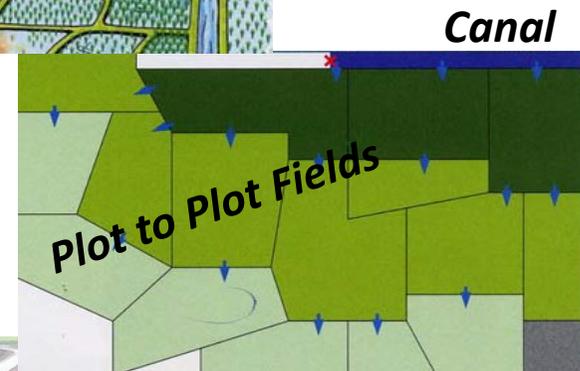
Introduction

Domestic



Vs

Irrigation

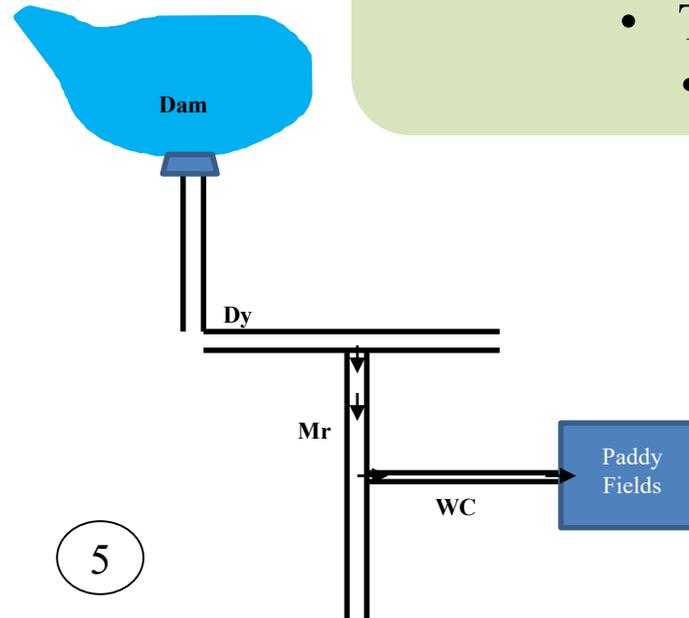


Background Information

One of the Functions of Irrigation Department

Implement as new multipurpose projects as possible with no environmental impacts.

- Build Dam
 - Construct Canals
 - Delivery of Water
 - To Paddy Fields and Farms
 - To generate hydro-power



Water Management

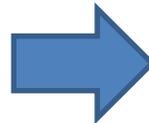
- Water supply at Right Time
- Equitable Distribution
- Optimum Irrigation Efficiencies
- Increasing Yields with Sustainable Manner
- Minimum Costs (Operation and Maintenance)



Background Information

Vision of MOALI

- Inclusive
- Competitive
- Food and nutrition secured
- Sustainable agricultural system



Socio-economic well-being of farmers and rural people

Further development of national economy

Water management is a critical input to
food production.



Background Information

Irrigation Water Management in Myanmar

IWUMD is mainly responsible for the systems above terminal units *such as main dams, head works, main canals and secondary units*

Farmers are responsible for farm level *such as watercourses and field ditches*

- **plot-to-plot** traditional irrigation system
(based on bilateral agreement between upstream and downstream water users)
- almost all irrigation canals are **Unlined (Earthen)**
- irrigation efficiency is **Uncertain**

Water from a branch canal **flows into a paddy field at the farthest upstream and then plot-to-plot to the lower reaches.**

By doing so, **the traditional water management is inefficient** and farmers who actually use water are to be more sensitive and more serious in water management. (7)



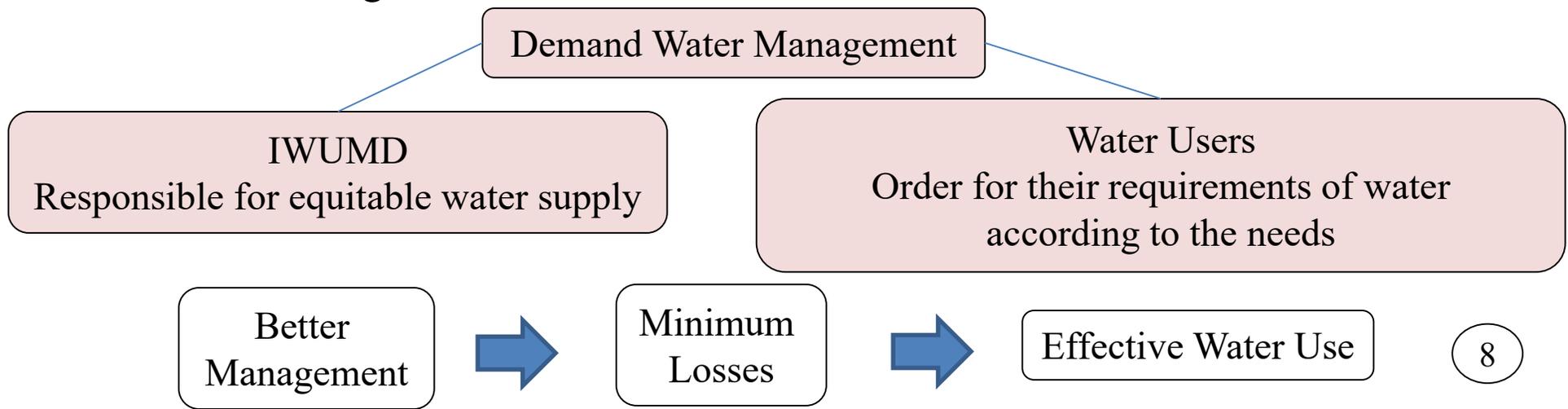
Background Information

Water User Groups and Water User Association

IWUMD has been establishing WUGs and encouraging the participation of farmers at as many irrigated area as possible.

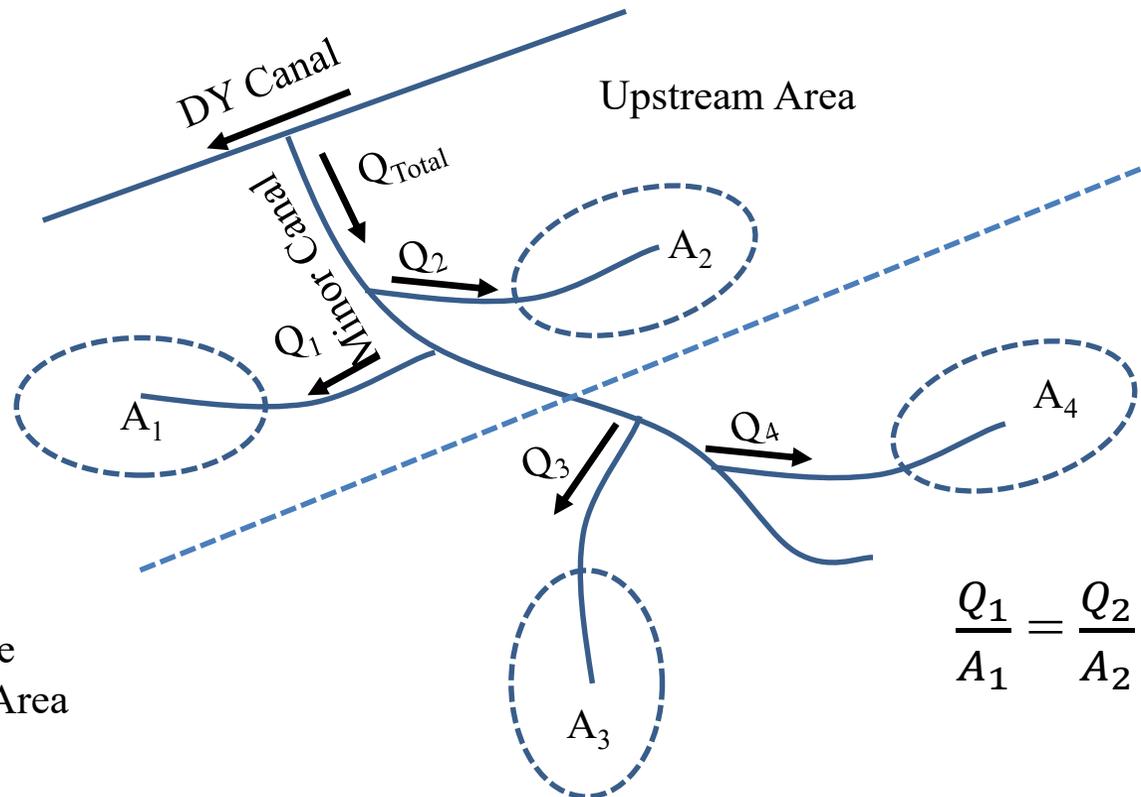
Participatory Irrigation Management has been introduced to irrigation engineers as well as farmers to promote the farmers participation.

Awareness trainings **concerning about laws and regulations of Canals and introduction to PIM** have been giving to improve the knowledge of farmers and to raise equal distribution among the WUGs.



Background Information

Equitable use of water To upgrade the Irrigation Efficiencies



Q = Discharge
A = Irrigated Area

$$\frac{Q_1}{A_1} = \frac{Q_2}{A_2} = \frac{Q_3}{A_3} = \frac{Q_4}{A_4}$$



Background Information

PIM Guideline

- PIM Guideline has been established with BWID (**Irrigation Development Project in Western Bago Region**) consultants
 - Joint Irrigation Management
 - Establishment of WUG/WUA

Irrigation will be jointly managed by Government and Farmers in Myanmar For efficient water management. Irrigation Management, IWUMD will expand the establishment of WUG/ WUA and water management activities in other Regions and States.

Benefits

Improvement in cropping pattern management, farmland reclamation and proper management of irrigation management with high irrigation efficiency in line with the guideline of PIM.



Some Projects have been implementing in IWUMD to upgrade Irrigation Facilities and Strengthen the Farmers' Participation

BWID: Irrigation Development Project in Western Bago Region

ADSP: Agriculture Development Support Project (Phase I)

AIIP: Agriculture Income Improvement Project

ADSP: Myanmar Agriculture Development Support Project (Phase II)



Irrigation Development Project in Western Bago Region (BWID) by JICA

Goal: to increase agricultural productions **by developing irrigation systems** thereby contributing to improve living standards of farmers in the Region and economic development of Myanmar.

Project sites: North Nawin, South Nawin, Wegyi, Taungnyo
(Western Bago Region)

- Activities:**
- Upgrade Canals to increase hydraulic efficiency
 - Implement WUGs to become equitable water use and strengthen the water management system
 - Land consolidation



Agriculture Development Support Project by using World Bank's loan (ADSP)

(Phase I)

Goal: To increase crop yields and cropping intensity

Project sites: Bago East, Nay Pyi Taw, Mandalay and Sagaing

(Phase I) regions of Myanmar

- Activities:**
- Irrigation Scheme Rehabilitation
 - Environmental and Social management
 - Implement WUGs



Agriculture Income Improvement Project (AIIP)

Project 1

Title: Strengthening Collaboration between Participatory Irrigation Management and Agricultural Extension

Goal: Farming activities in the project site is improved by introducing participatory irrigation management in the irrigated areas and better-structured extension system.

Project sites: Shwebo, Wetlet, Khin-U, Ye-U, Taze, Tabayin

Activities: Establish WUGs
Provide TOT Trainings



Agriculture Income Improvement Project (AIIP)

Project 2

- Title:** Rice-centered Agribusiness Development with Participatory Irrigation Management in Shwebo
- Goal:** Farmers in the project site practice profitable agriculture including participatory irrigation management in the irrigated areas.
- Project sites:** Shwebo, Wetlet, Khin-U, Ye-U, Taze, Tabayin
- Activities:** Establish WUGs
Provide TOT Trainings



Myanmar Agriculture Development Support Project by using World Bank's loan (ADSP)

(Phase II)

Goal: To increase crop yields and cropping intensity

Project sites:

(Phase I) regions of Myanmar

- Activities:**
- Irrigation Scheme Rehabilitation
 - Environmental and Social management
 - Implement WUGs



Asset Management for Irrigation System

Asset Management for Irrigation System has been implementing with Agricultural Development Consultants Association (ADCA) using the GPS system to enhance the maintenance of irrigation systems and water facilities. On the job training finished with the irrigation engineers and Pilot Project has been established in Baw Ni Irrigated Area in Bago Region. This technology gives rise to rehabilitation of canal system and monitoring will perform annually.

There are going to be implemented in Dams and canals with telemetry system to provide real time management. To promote irrigation efficiencies and the proper regulation and distribution of water.



Prospective

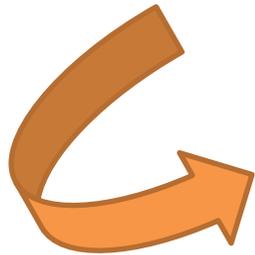
- Secure equitable distribution of water among water users
- Adequate maintenance of irrigation system
- Efficient and economical utilization of water to optimize agricultural production
- Promote the WUGs for efficient water management



Prospective

Costs

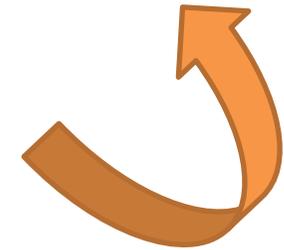
- Construction
- Operation and Maintenance



- Efficient Water Use
- Proper Management in Operation and Maintenance
- Farmers' Participation

Benefits

Secured Food



Benefits outweigh costs



$B/C > 1$



Future Plans

Technical Cooperation

- International organizations
- Workshops, Trainings, Projects

Farmers' Trainings

Awareness training and capacity building to farmers at different irrigated areas.

Tasks

- Improve Irrigation Performance together with farmers in accordance with the PIM guideline.
- Irrigation management implemented with the aid of International organization (BWID, ADSP, etc) will be carrying out enormously.



Thank you for your kindly attention