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GLOBAL FRAMEWORK FOR
CLIMATE SERVICES



Regional Stakeholder Consultation on Climate Services for the Third Pole Region

Jaipur, India
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Myanmar

Implementation of Directorate of Water
Resources and Improvement of River
Systems (DWIR) in Myanmar



A Brief Description of DWIR

- 1. One of the Agency under Ministry of Transport**
- 2. Mainly Responsible for Conservation of River Systems in Myanmar**
- 3. Focal Department for National Water Resources Committee**
- 4. Five departments; Administrative Dept., National Hydrological Research and Planning Dept., two Waterway Conservation Depts. for Upper and Lower Myanmar, Marine and Equipment Dept.**

Objectives

- 1. To conserve and protect the water resources and rivers system for beneficial utilization by the public**
- 2. To smooth and safety waterways navigation along rivers and creeks**
- 3. To contribute to the development of State economy through improving water resources and river system**
- 4. To protect environmental impact**

National Hydrological Research and Planning Department

- Preparatory research for river training.
- Least Available Depth (LAD) prediction.
- Ayeyarwady and Chindwin data bank improvement for river training works.
- Qualitative and quantities study on river water resources.
- Develop the hydrographic envelopes of gauge stations on major rivers.

Waterways Conservation Department

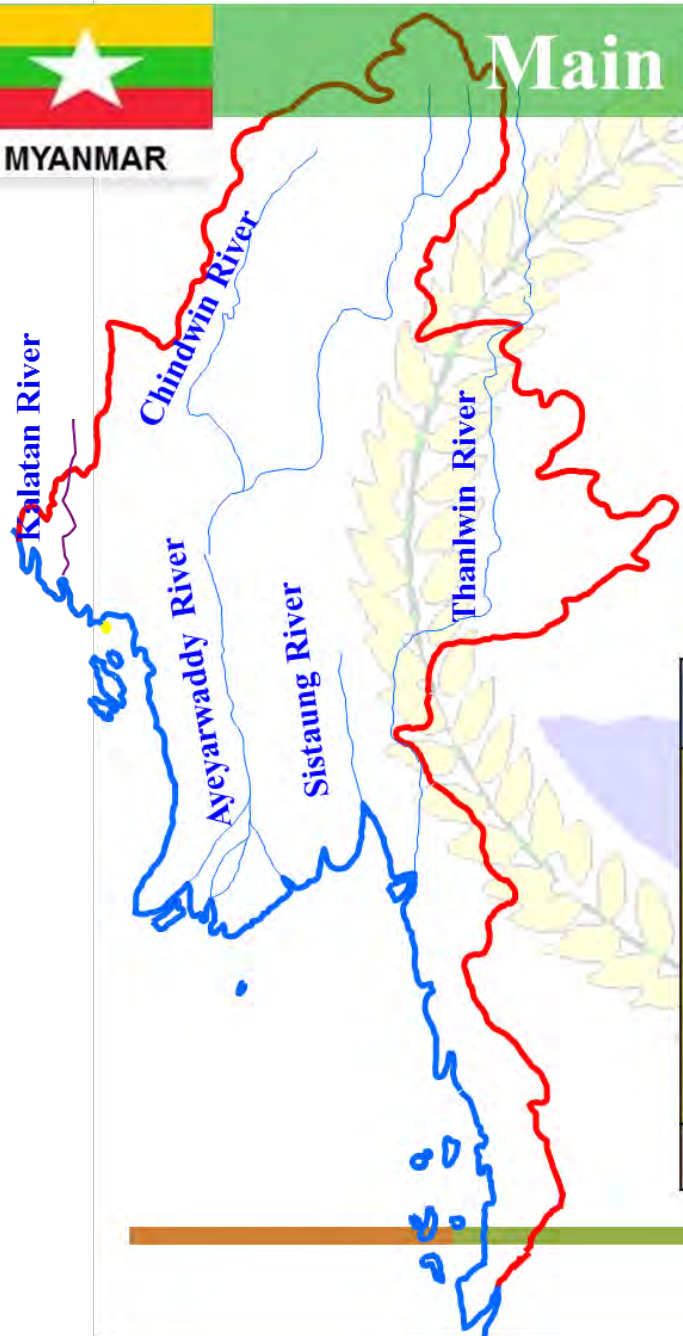
- Navigation Section
- Surveying Section
- River Engineering Section
- Dredging Section





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Main Rivers in Myanmar



Name of River	(Length) (km)	(Catchment) (sq-km)	(Discharge) (mil cu-m)
Ayeyarwady	2100	288900	313720
Chindwin	1100	115300	141290
Sittaung	420	34395	41900
Thanlwin	2410	158000	257920
Kaladan	650	22611	53800

Navigable Length of Major Rivers

Name of River	Navigable Length (km)
Ayeyarwady	1534
Chindwin	730
Thanlwin and other rivers in Mon State	380
Dalta Region	2404
Rivers in Rakhaing State	1602
Total Length (km)	6650



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River Improvement Methods

1. Discharge Control

2. Water Level Control

3. River Bed regulation



Bed Regulation

1. Temporary

- Bandalls
- Bottom and surface panels
- Recurrent dredging

2. Permanent

- Wooden Pile Groyne
- Rock Groyne
- Steel Cable Groyne
- Deflectors
- Branch Closing

Challenge of Natural Rivers

- Braided channels
- Insufficient water depth in low water season
- Dangerous flood in wet season
- Large sediment transport
- Bank Erosion



Data Received from DMH

- Water Level
- Flood Warning
- Cyclone Warning
- Draught Warning



Action on Information

- 
- **Sharing information and warning to the River Users (Vessels)**
 - **Issuing Draft Restriction**
 - **Direction on vessels**
 - **Preparation for responsive activities**

Gap and Challenge

- Requirement for more rainfall data and temperature data for more locations
- Need to upgrade for advanced navigation system and river monitoring system
- Water Quality Monitoring and Control
- Sediment load Monitoring and control
- Capacity Building of the staff

Way Forwards

- **Implementation of the Ayeyarwady Integrated River Basin Management Project including Formation Hydro-informatics Centre, Construction of National Water Resources Committee office, Hydro-met Observation and Information Systems Modernization and Navigation Improvement**
- **Flood Mitigation Works in Coordination with Related Departments**
- **Capacity Building Activities**
- **Improved River Training Works (Water Level Regulation)**



THANK YOU.