

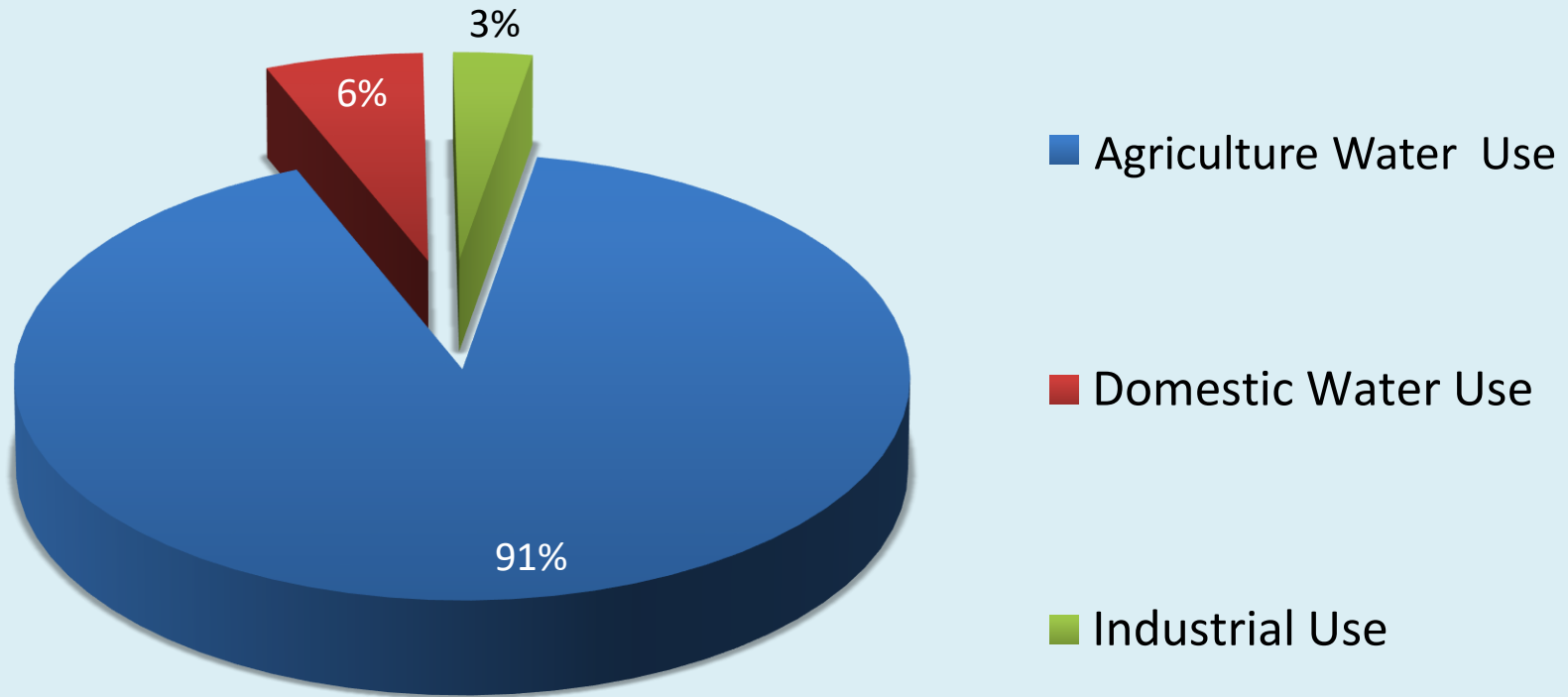


**Republic of the Union of Myanmar**  
**Ministry of Agriculture, Livestock and Irrigation**

# **Irrigation and Water Utilisation Management Department (IWUMD)**



# AGRICULTURE WATER



- Myanmar : Agro- based Country and agriculture sector is the back bone of its economy
- Total utilization of nation's water at present is about 56 km<sup>3</sup> and that is only 5% of total water potential
- Mainly for agriculture sector and some smaller quantities for domestic use, industrial use and other purposes

# Water Resources and Status of Utilization



Dam



Weir



Barrages



Tanks



Sluice gates

❖ <i>Land area</i>	67.66 mill. ha	❖ <i>Annual utilization of water for cultivation</i>	39.55 km <sup>3</sup>
❖ <i>Cultivable Land</i>	17.70 mill. ha	❖ <i>Water availability per acre for whole of Myanmar</i>	1.60 m
❖ <i>Population</i>	54.36 mill.	❖ <i>Water availability for one acre of cultivable land</i>	6.30 m
❖ <i>Cultivable land availability per person</i>	0.33 ha	❖ <i>Current percentage of annual usage of water for cultivation</i>	6%
❖ <i>Annual inflow of Water resources</i>	1081.3 km <sup>3</sup>		
❖ <i>Irrigated area under various means</i>	2.20 mill. ha		

# Water Resources Management

Drinking water and sanitation	Agriculture and Irrigation	Hydropower	Rivers and inland water transport	Flood and Cyclone hazards	Forestry and Mangroves	Industry, mining and strong economic dev.
<ul style="list-style-type: none"> <li>• Safe drinking water</li> </ul>	<ul style="list-style-type: none"> <li>• Sustainable livelihood of people</li> </ul>	<ul style="list-style-type: none"> <li>• Prolong lifetime of dams</li> </ul>	<ul style="list-style-type: none"> <li>• Erosion control</li> </ul>	<ul style="list-style-type: none"> <li>• Prevent flash floods</li> </ul>	<ul style="list-style-type: none"> <li>• Planned reforestation</li> </ul>	<ul style="list-style-type: none"> <li>• Water quality control</li> </ul>
<ul style="list-style-type: none"> <li>• Piped water supply</li> </ul>	<ul style="list-style-type: none"> <li>• Upgrade irrigation systems</li> </ul>	<ul style="list-style-type: none"> <li>• Improve sediment management</li> </ul>	<ul style="list-style-type: none"> <li>• Integration of MoALI/MoTC for river water supply</li> </ul>	<ul style="list-style-type: none"> <li>• Early flood warning systems</li> </ul>	<ul style="list-style-type: none"> <li>• Aquaculture and mangrove resaturation</li> </ul>	<ul style="list-style-type: none"> <li>• Water utilisation savings</li> </ul>
<ul style="list-style-type: none"> <li>• Solid waste collection</li> </ul>	<ul style="list-style-type: none"> <li>• Drainage improvement</li> </ul>	<ul style="list-style-type: none"> <li>• Raise installed capacity</li> </ul>	<ul style="list-style-type: none"> <li>• Improve navigation channels</li> </ul>	<ul style="list-style-type: none"> <li>• Improve data collection chain/evacuation</li> </ul>	<ul style="list-style-type: none"> <li>• Conservation mangroves for flood protection</li> </ul>	<ul style="list-style-type: none"> <li>• Support decision making by SEIA</li> </ul>
<ul style="list-style-type: none"> <li>• Sewage waste treatment</li> </ul>	<ul style="list-style-type: none"> <li>• Modernization of polders</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation of EISA</li> </ul>	<ul style="list-style-type: none"> <li>• Stabilize inland river ports</li> </ul>	<ul style="list-style-type: none"> <li>• Continuation of shelter scheme</li> </ul>	<ul style="list-style-type: none"> <li>• Improve awareness of vulnerability</li> </ul>	<ul style="list-style-type: none"> <li>• Development of eco-tourism</li> </ul>
<ul style="list-style-type: none"> <li>• Water consumption saving</li> </ul>	<ul style="list-style-type: none"> <li>• Sustainable fishing and aquacultures</li> </ul>		<ul style="list-style-type: none"> <li>• Harbour and navigation development</li> </ul>	<ul style="list-style-type: none"> <li>• Multi-purpose dam operation</li> </ul>		<ul style="list-style-type: none"> <li>• Water foot print</li> </ul>

# How to get Agriculture Water

- It is estimated about 69% of surface / ground water, around the globe, is consumed as the agriculture water (FAO, 2002)
- Agriculture water can not get sufficiently from rainwater in some part of the country
- Irrigation water has to be supplemented as agriculture water
- Irrigation water come from surface water/river water as well as ground water
- Surface water – IWUMD (Irrigation)
- River water and Ground water - IWUMD(Water Resources Utilization)

# Irrigation and Water Utilisation Management Department (IWUMD)

- Governmental organization under the Ministry of Agriculture, Livestock and Irrigation (MoALI)
- Main responsibility of IWUMD is sustainable operation and maintenance of (Irrigation) water management
- Another responsibility of IWUMD is operation and maintenance of flood protection embankments and polders system all over the country
- IWUMD operates, maintains and manages 581 irrigation facilities and 479 flood protection and drainage facilities in the country



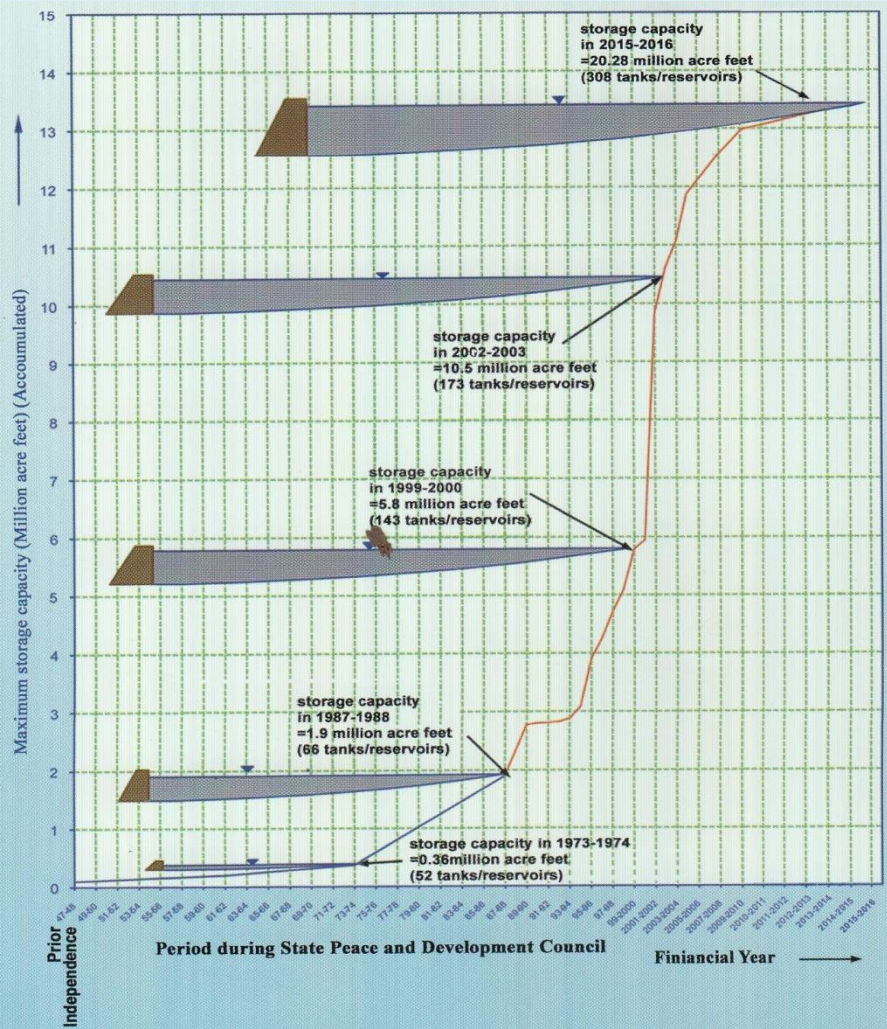
# IWUMD (Irrigation)

- Water resources development: Storage reservoirs
- Water resources management: Weirs and Sluices
- Irrigation network system development
- Flood protection: Embankments and Polders

Irrigable Area ('000ha)			Flood protected area ('000 ha)			
Dam	Weir/Tank/sluiice	Total	Sluice	Embankment	Drainage Channel	Total
743.00	401.42	1144.42	138.58	1139.26	355.49	1633.33



# Increase in Storage Capacity of Dams and Tanks



Sr. No.	Particulars	Tanks/Reservoirs (No.)	Storage Capacity (MCM)
1	Completed Tanks/Reservoirs before 1988	138	2,333.70
2	Completed Tanks/Reservoirs up to 2016	308	24,953.26

MCM- million cubic meters



# IWUMD (Water Resources Utilisation)

- River water : Pumping stations
- Canal network system development

Completed, Ongoing and Planned River Water Pumping Projects on various rivers

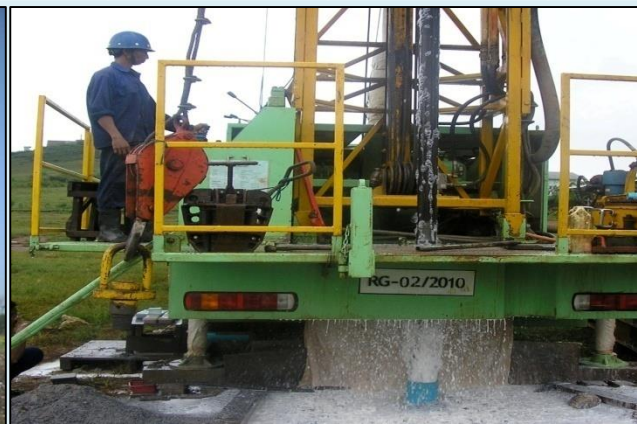
Name of River	Ayeyar-wady	Chin-dwin	Than-lwin	Sit-taung	Mu	Dokehta-wady	Others	Total
No. of Projects	86	22	6	29	24	27	196	390
Command Area (ha.)	118794	39358	3474	11150	13072	7632	109280	302760



# IWUMD (Water Resources Utilisation)

- Ground water resources development: Tube wells
- Canal network system development

Sr	Description	Pump Irrigation		Ground Water		Total	
		No.	Hectare	No.	Hectare	No.	Hectare
1	Completed	332	204264	12508	66597	12840	270861
2	On Going	35	95700	2114	8809	2149	104509
3	Planned	23	2796	6307	25779	6330	28575
<b>Total</b>		<b>390</b>	<b>302760</b>	<b>20929</b>	<b>101185</b>	<b>21319</b>	<b>403945</b>



# How did the country develop their Delta?

## ❑ Flood Resilience Delta

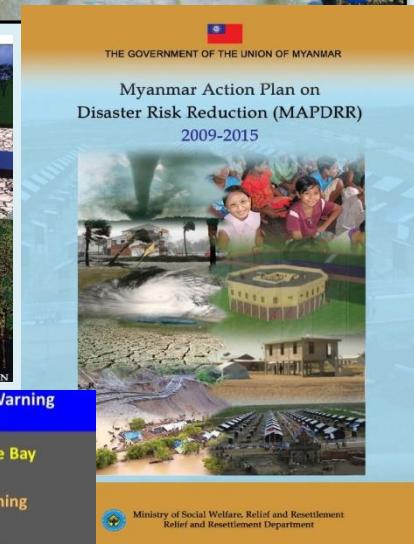
- Flood protection works
- Flood fighting practice

## ❑ Food Secure Delta

- Polder system for agriculture development
- Irrigation and drainage

## ❑ Climate Resilience Delta

- After Nargis Cyclone, evacuation of local people - cyclone shelters, drinking water ponds and storm shelter embankment (Hillock) were built
- Early warning system
- Awareness raising for local people
- Myanmar Action Plan on Disaster Risk Reduction (MAPDRR)

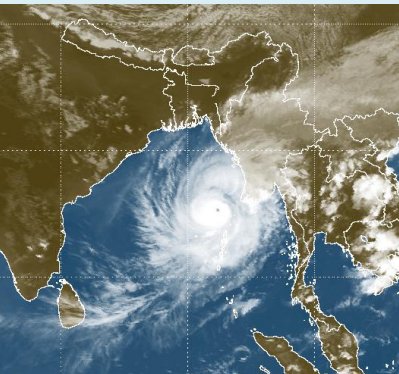


**Color Code used for Storm Warning Cyclonic Storm Event**

- **Yellow** – Cyclonic storm forms in the Bay of Bengal
- **Orange** – Cyclonic storm is approaching Myanmar Coast
- **Red** – Cyclonic storm is going to cross Myanmar Coast within 12 hours
- **Brown** – Cyclonic storm is crossing Myanmar Coast
- **Green** – The remnant of Cyclonic Storm is dissipated

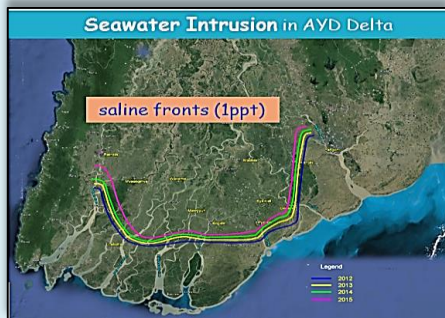
# Lessons Learned

- After the Nargis Cyclonic Storm, more attention is given to disaster preparedness and early warning system
- Awareness raising for the local people
- Relief and evacuation program
- Practising the disaster preparedness drill
- Importance of well collaboration of government, INGOs and NGOs



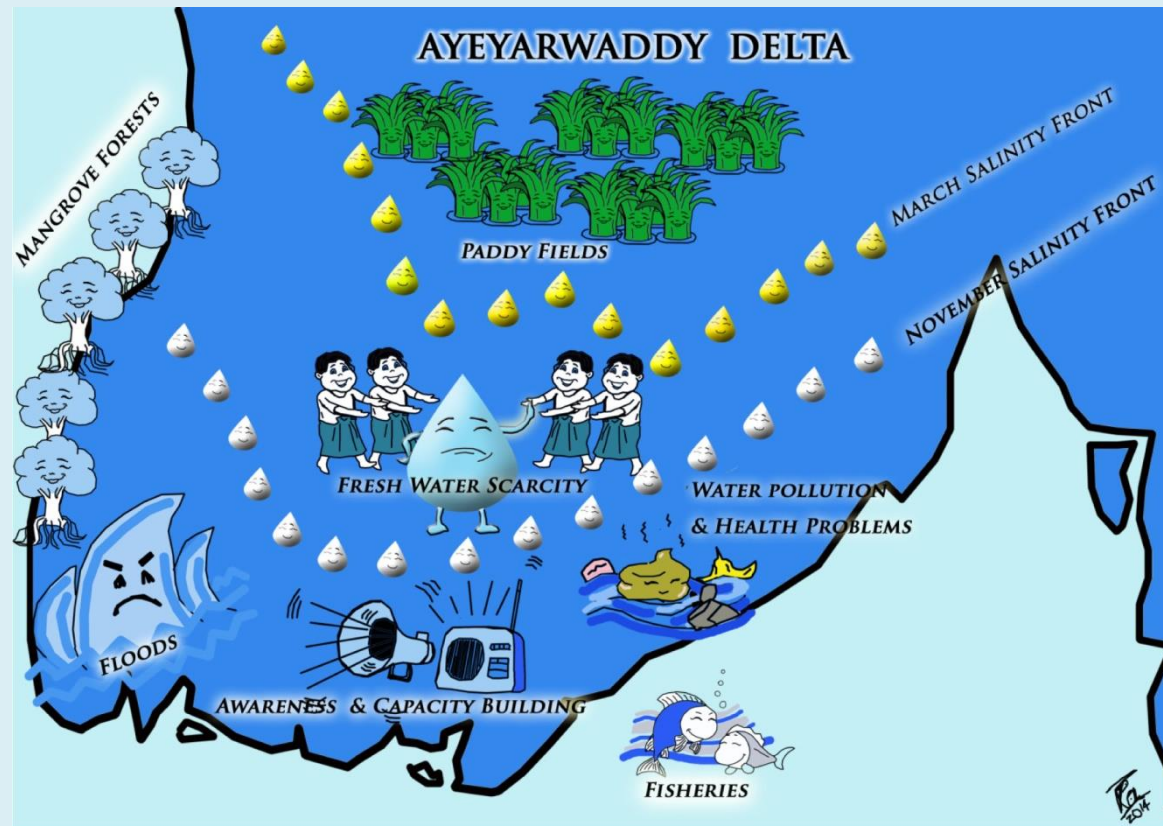
# Important Issues

- Salinity Intrusion
- Lack of Infrastructure and asset management
- Mangroves and delta degradation
- Adverse water and environmental quality
- Public health
- Flooding and lack of drainage
- Livelihood limitations
- Lack of knowledge and innovation



# Expected In the Near Future

- Development of Integrated Delta Strategy
- Adoption of Adaptive Delta Management
- Master Plan for Resilience Urban Delta
- Phase by Phase realization of actual implementations



# Conclusions

- ❖ Myanmar is primarily an agricultural country. It has been endowed with an abundance of land and water resources and also with adequate manpower.
- ❖ As agriculture remains pivotal for the overall economic development of the nation, the State has been rendering all-out assistance and strong support from all perspectives for its enhancement.
- ❖ IWUMD under MOALI has diligently conformed to the State's objectives with the construction of new infrastructures, and maintenance and efficient operation of the existing irrigation facilities.
- ❖ The Department has also in addition, and as one of its main tasks, been actively engaged in water development planning, and the furtherance of irrigation for food security.



**THANK YOU  
FOR YOUR KIND ATTENTION !**

**Zaw Lwin Tun**

**Irrigation and Water Utilisation Management Department  
Ministry of Agriculture, Livestock and Irrigation**