



“Joint Initiatives or Projects that Make a Difference in Addressing Water Scarcity and Drought”

National Water Balance Management System: Pioneering Solutions in Malaysia through Joint Projects for Water Scarcity and Drought

BY

R MOHAMAD RADZI BIN ABDUL TALIB

DIRECTOR

DIVISION OF WATER RESOURCES MANAGEMENT AND HYDROLOGY,
DEPARTMENT OF IRRIGATION AND DRAINAGE (DID) MALAYSIA

PRESENTATION OUTLINE



1. Introduction to
Water Scarcity and
Drought



2. National Water
Balance Management
System (NAWABS)

3. Joint Initiatives
with Stakeholders



4. Conclusion



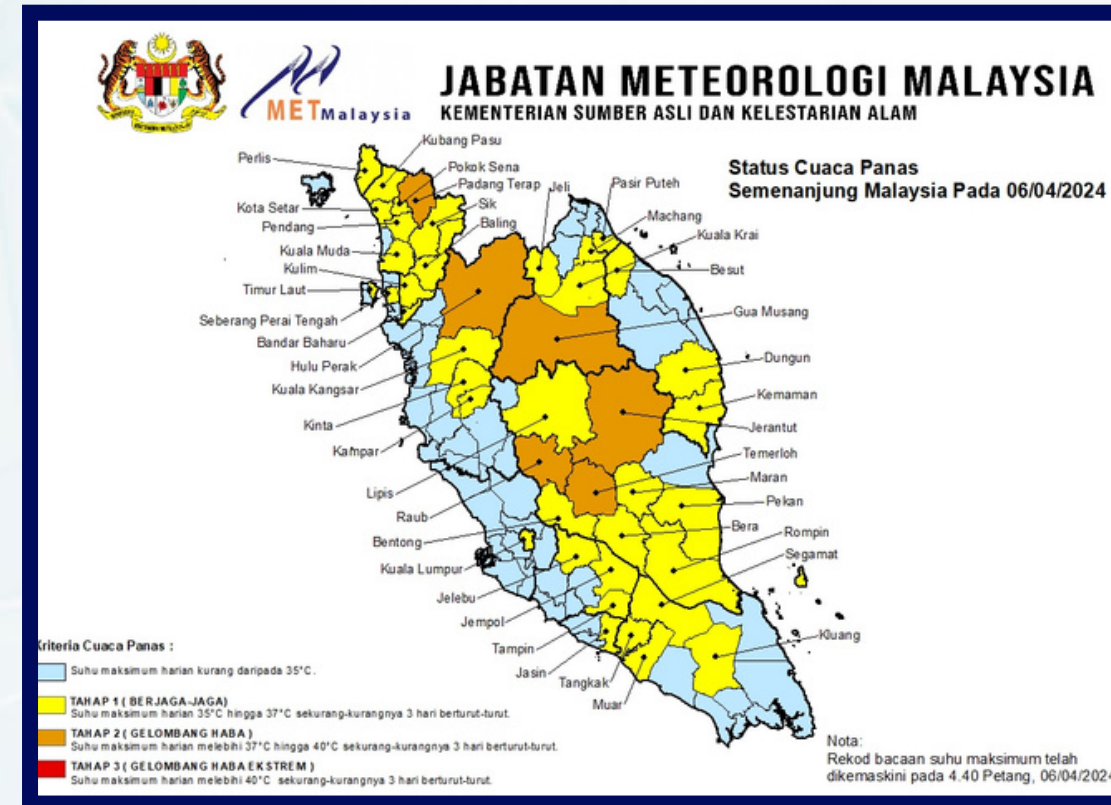
INTRODUCTION TO WATER SCARCITY AND DROUGHT

Understanding Water Scarcity

Water scarcity refers to the lack of sufficient available water resources to meet the demands of water usage within a region. This can be due to physical scarcity, where natural water supplies are low, or economic scarcity, where infrastructure limits access to water.

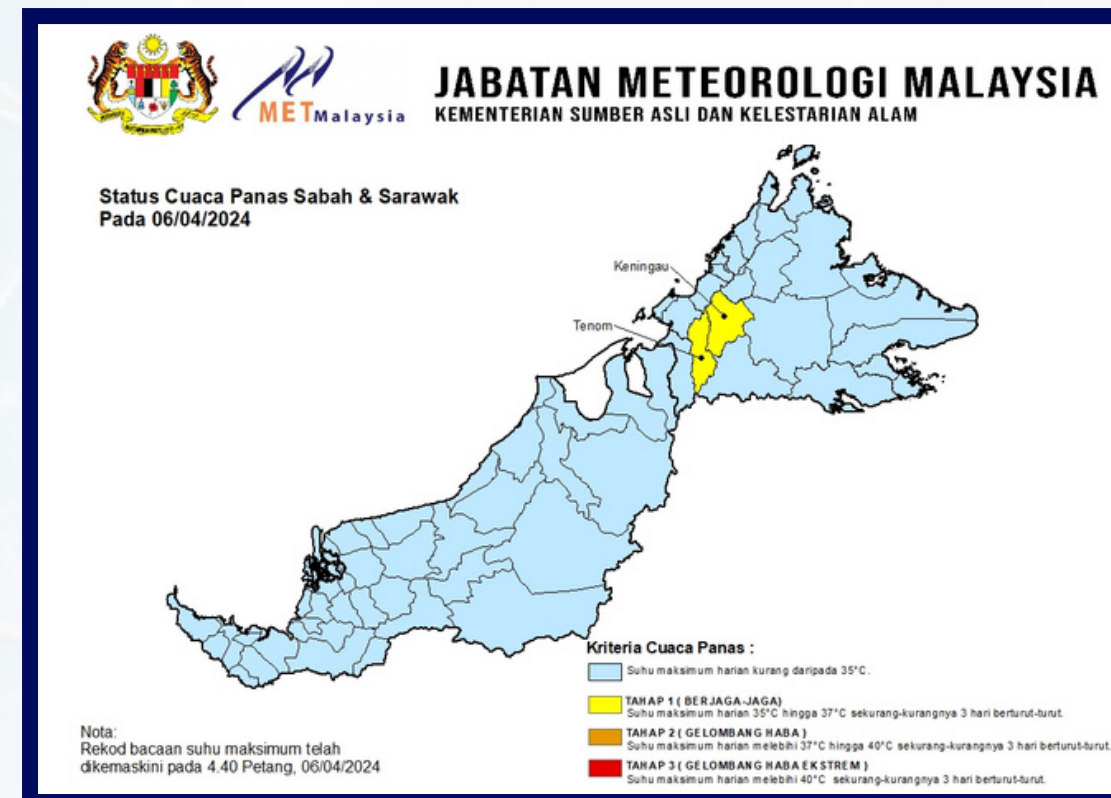
Understanding Drought

Abnormally dry conditions that result in serious hydrological imbalances to the affected area. The more accurate definition of drought used in this regulation is divided into four definitions, namely Meteorological Drought, Hydrological Drought, Agricultural Drought and Socio-Economic Drought.

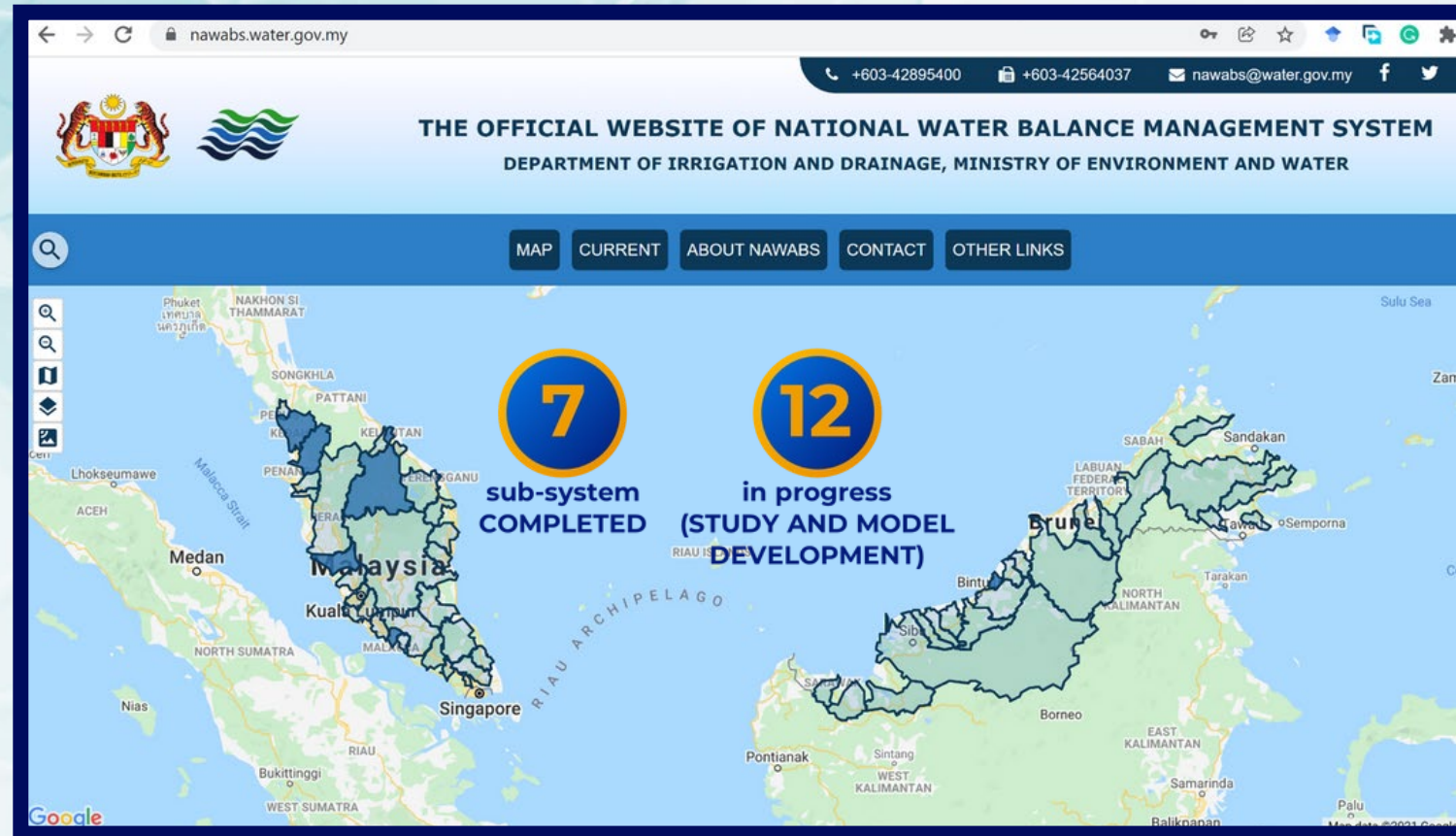


Heat Warnings for nationwide issued by Malaysia Meteorological Department (MMD) on 6th April 2024

- Maximum daily temperature less than 35 °C
- Level 1 (caution): recorded temperatures of 35-37 °C for at least three consecutive days.
- Level 2 (heat wave): recorded temperatures of 37-40 °C for at least three consecutive days.
- Level 3 (extreme heat wave): recorded temperatures >40 °C for at least three consecutive days.



WHAT IS NAWABS ?

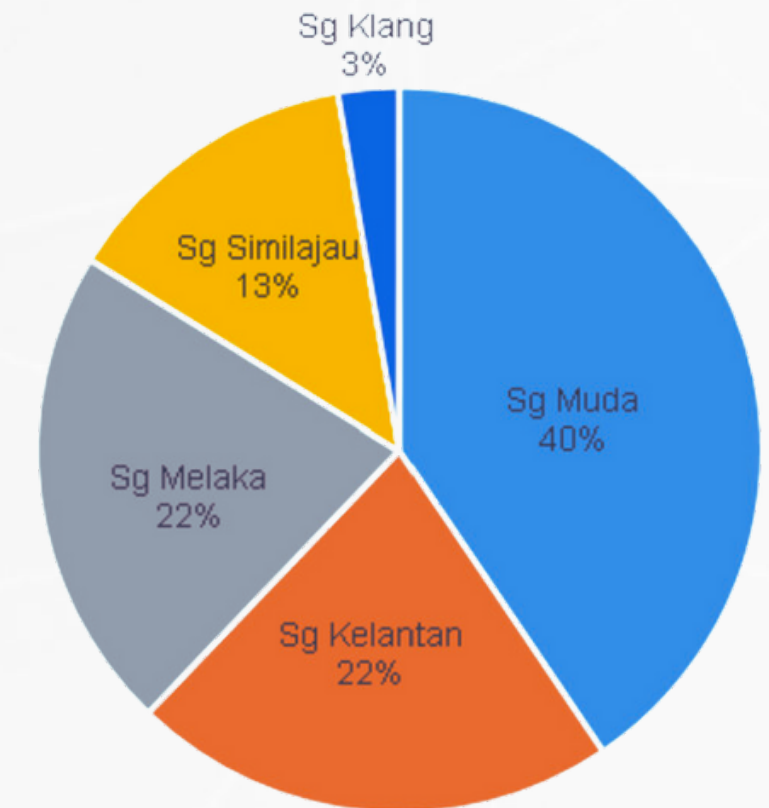


Drought : 37 Warning Notices
(Mac – October 2023)

NAWABS Outcome:

Forecast Drought **2** months ahead

WARNING Drought **14** days ahead



Sg. Muda : 15 Notices
Sg. Kelantan : 8 Notices
Sg. Melaka : 8 Notices
Sg. Similajau : 5 Notices
Sg. Klang : 1 Notice

NAWABS PHASE 2 RM45 Mil (2016-2025)

Bil	River Basin	Area (Sq.KM)
1	Sg Perlis	724
2	Sg Kerian	1,420
3	Sg Perak	14,908
4	Sg Kurau	740
5	Sg Langat	2,348
6	Sg Kesang	658
7	Sg Johor	2,286
8	Sg Sedeli Besar	1,425
9	Sg Muar	6,138
10	Sg Pahang	28,682
11	Sg Kuantan	1,684
12	Sg Padas	8,822

NAWABS PHASE 1 RM49.5 Mil (2016-2025)

Bil	River Basin	Area (Sq.KM)
1	Sg Kedah	2,972
2	Sg Muda	4,150
3	Sg Bernam (2686 sq.km)	4,043
	Sg Tenggi (361 sq.km)	
	Barat Laut Selangor Irrigation Scheme (BLSIS) (183 sq.km)	
	North Selangor Peat Swap Forest (NSPSF) (813 sq.km)	
4	Sg Klang	1,297
5	Sg Melaka	615
6	Sg Kelantan	12,981
7	Sg Similajau	532

HOW WILL



HELPS WATER MANAGERS?

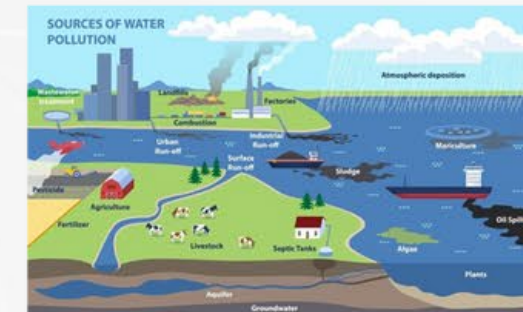
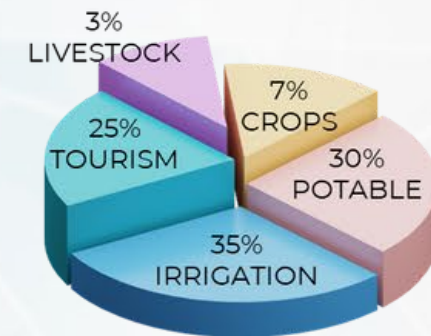
Water Accounting

All water entry and exit/loss within the river basin



WATER RESOURCES STUDY

- Water Resources Balance Study
- Demand Management Study
- Water Resources Conservation Plan
- Environmental Flow Study
- WEF & Water Footprint Study



WATER PRIORITIZATION

Decision on who obtains the water first based on demand and availability

WATER ALLOCATION

Decision on how water is allocated based on demand and priority

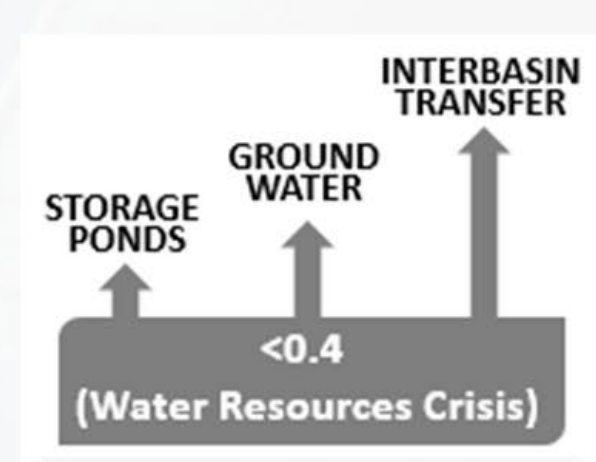
WATER QUALITY

Determine water quality threshold limits, TMDL and environmental flow compliance



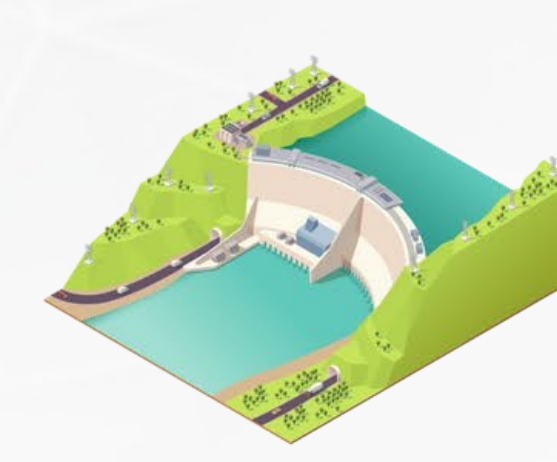
WATER AUDITING

Perform audit on all water resources inflow, effective rainfall and losses to the sea



WATER RESOURCE & DROUGHT INDEX

Calculate Water Resource Index (WRI)

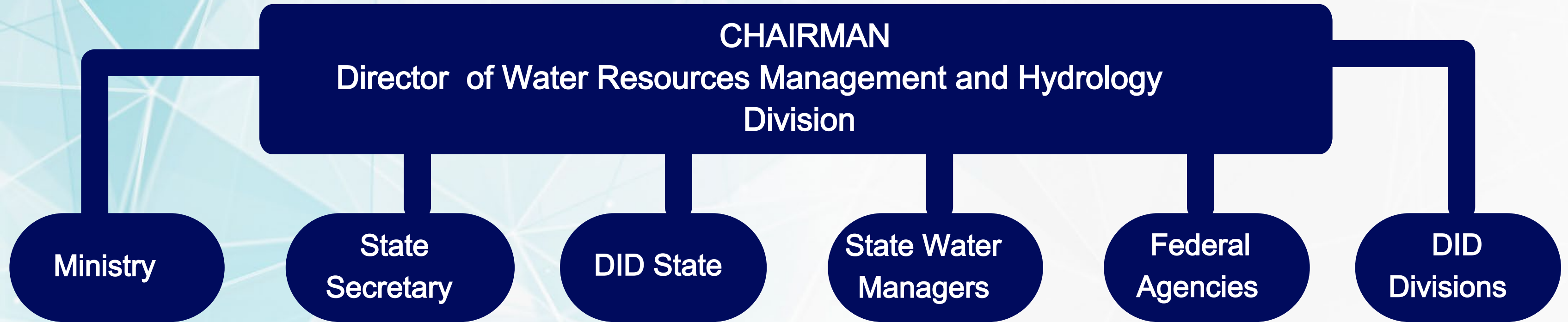


DAM RELEASE STORAGE

Forecast dam inflows and decide timing and amount of water to release

JOINT INITIATIVES WITH STAKEHOLDERS

NAWABS STEERING COMMITTEE





CONCLUSION

Joint initiatives leveraging NAWABS have shown significant promise in enhancing water management in Malaysia . By showcasing successful case studies, measurable outcomes, and community engagement, these projects prove essential in combating water scarcity .

THANK YOU

Ir. MOHAMAD RADZI BIN ABDUL TALIB

DIRECTOR

DIVISION OF WATER RESOURCES MANAGEMENT AND HYDROLOGY,
DEPARTMENT OF IRRIGATION AND DRAINAGE MALAYSIA



www.nawabs.water.gov.my

Division of Water Resources Management And Hydrology

Department of Irrigation and Drainage Malaysia



Level 1, Block A,

DID Malaysia, Cyberjaya, Selangor