



## **NATIONAL WATER COLLOQUIUM 2009**

# **Good Governance for Water Demand Management – Malaysian Perspective**

**by**

***IR ABDUL KADIR MOHD DIN & IR THAM YEE KIONG***  
***19 - 21 October 2009***

# OUTLINE OF PRESENTATION



Pengurusan Aset Air

1. DEFINITIONS
2. OBJECTIVES
3. THE NEED – MALAYSIAN SCENARIO
4. CASE STUDY – SELANGOR WATER SUPPLY
5. WATER DEMAND MANAGEMENT
6. CONCLUSION



## **DEFINITIONS**



Pengurusan Aset Air

- ❖ WATER DEMAND MANAGEMENT IS DEFINED AS ANY PRACTICE OR POLICY IMPLEMENTED WHICH RESULTS IN WATER BEING USED IN A MORE EFFICIENT, EQUITABLE AND SUSTAINABLE WAY *(IDRC, Middle East & North Africa)*
- ❖ WATER DEMAND MANAGEMENT IS A TOOL FOR ACHIEVING HARMONY BETWEEN THE DEMAND FOR WATER AND THE AVAILABILITY OF WATER *(Tue Kell Nielson, 2002)*

## **OBJECTIVES**

WATER DEMAND MANAGEMENT IS APPLIED TO :

- ❖ PLANNING FOR THE RIGHT BALANCE OF RESOURCES, DEMAND AND SUPPLY OF POTABLE WATER;
- ❖ MINIMISING WATER LOSS, ENCOURAGE EFFECTIVE USAGE AND MITIGATE ANTICIPATED SHORTFALL;
- ❖ ALLOCATION OF SUFFICIENT BUDGET AND FUNDING FOR WATER INFRASTRUCTURES;

## ***OBJECTIVES (continued)***



Pengurusan Aset Air

- ❖ INCREASE EFFICIENCY IN WATER SUPPLY SERVICES TO MEET CONSUMERS SATISFACTION AND
- ❖ PROVIDE A HOLISTIC, INTEGRATED AND SUSTAINABLE ENVIRONMENT

## ***THE NEED - MALAYSIAN SCENARIO***



Pengurusan Aset Air

- ❖ EXISTING SITUATION IN MALAYSIA :
  - NO COORDINATED WATER DEMAND MANAGEMENT AND PLANNING
  - ABSENCE OF STANDARD WATER DEMAND PROJECTION MODEL
  - AD HOC REVIEW ON THE WATER DEMAND BY RELEVANT STAKEHOLDERS

## CASE STUDY – SELANGOR WATER SUPPLY



Pengurusan Aset Air

- ❖ WATER CRISIS INCIDENT IN SELANGOR AND WILAYAH PERSEKUTUAN KUALA LUMPUR IN 1998
  - WATER SHORTAGE AFFECTED ALMOST ALL OF KLANG VALLEY.
  - INSUFFICIENT WATER RESOURCES FROM MAIN RIVER BASIN TO MEET WITH INCREASING WATER DEMAND.
  - HIGH WATER LOSSES AND LACK OF WATER INFRASTRUCTURES.

## **CASE STUDY – SELANGOR WATER SUPPLY (Continued)**



Pengurusan Aset Air

### EFFORTS BY GOVERNMENT :

- ❖ NATIONAL WATER RESOURCES STUDY (NWRS), 2000
- ❖ WATER RESOURCE AND DEMAND STUDY BY SELANGOR STATE GOVERNMENT
- ❖ PAHANG SELANGOR RAW WATER TRANSFER (PSRWT) PROJECT BY WORKING GROUP OF JAPAN BANK OF INTERNATIONAL COOPERATION (JBIC) AND CAWANGAN BEKALAN AIR (CBA), 2004



## **CASE STUDY – SELANGOR WATER SUPPLY (Continued)**



Pengurusan Aset Air

### RESOLUTION :

- DIFFICULT TO DEVELOP NEW WATER RESOURCES WITHIN THE STATE
- INTER BASIN TRANSFER HAS BECOME A FEASIBLE OPTION IN VIEW OF THE FACT THAT ALL EXISTING RESOURCES WITHIN SELANGOR, WILAYAH PERSEKUTUAN KUALA LUMPUR AND PUTRAJAYA HAS BEEN UTILIZED FOR BOTH, POTABLE WATER AND IRRIGATION WATER PURPOSES

## **CASE STUDY – SELANGOR WATER SUPPLY (continued)**

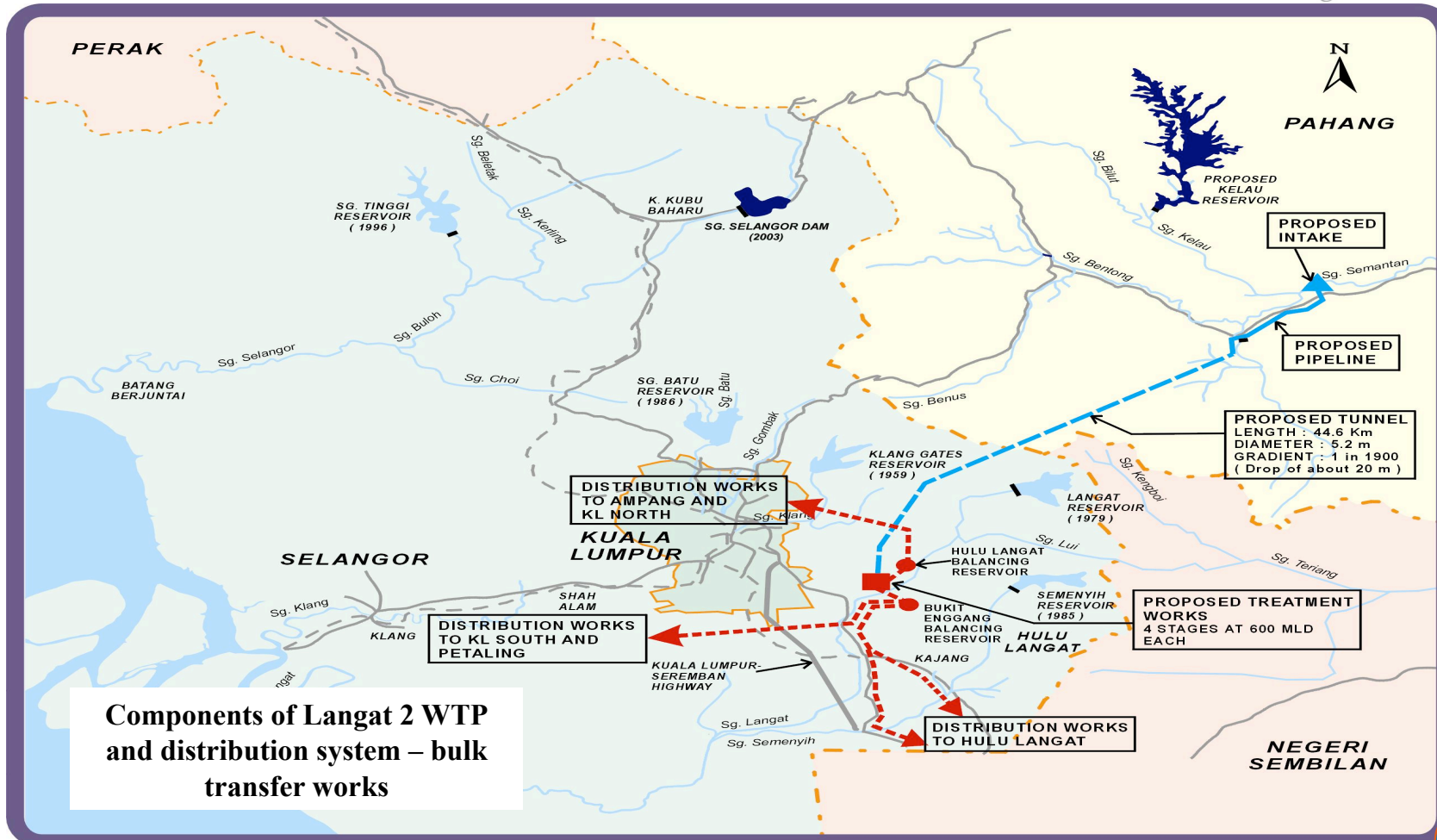


Pengurusan Aset Air

### REFINEMENT :

- ❖ DETAILED WATER DEMAND ASSESSMENT OF PROJECTED WATER SUPPLY AND DISTRIBUTION IN SELANGOR, WP KUALA LUMPUR/PUTRAJAYA WAS CARRIED OUT
- ❖ PAHANG SELANGOR RAW WATER TRANSFER AND LANGAT 2 WATER SUPPLY SCHEMES ESTABLISHED TO MITIGATE THE ANTICIPATED WATER CRISIS

# CASE STUDY – SELANGOR WATER DEMAND (continued)



## ***CASE STUDY – SELANGOR WATER SUPPLY (continued)***



Pengurusan Aset Air

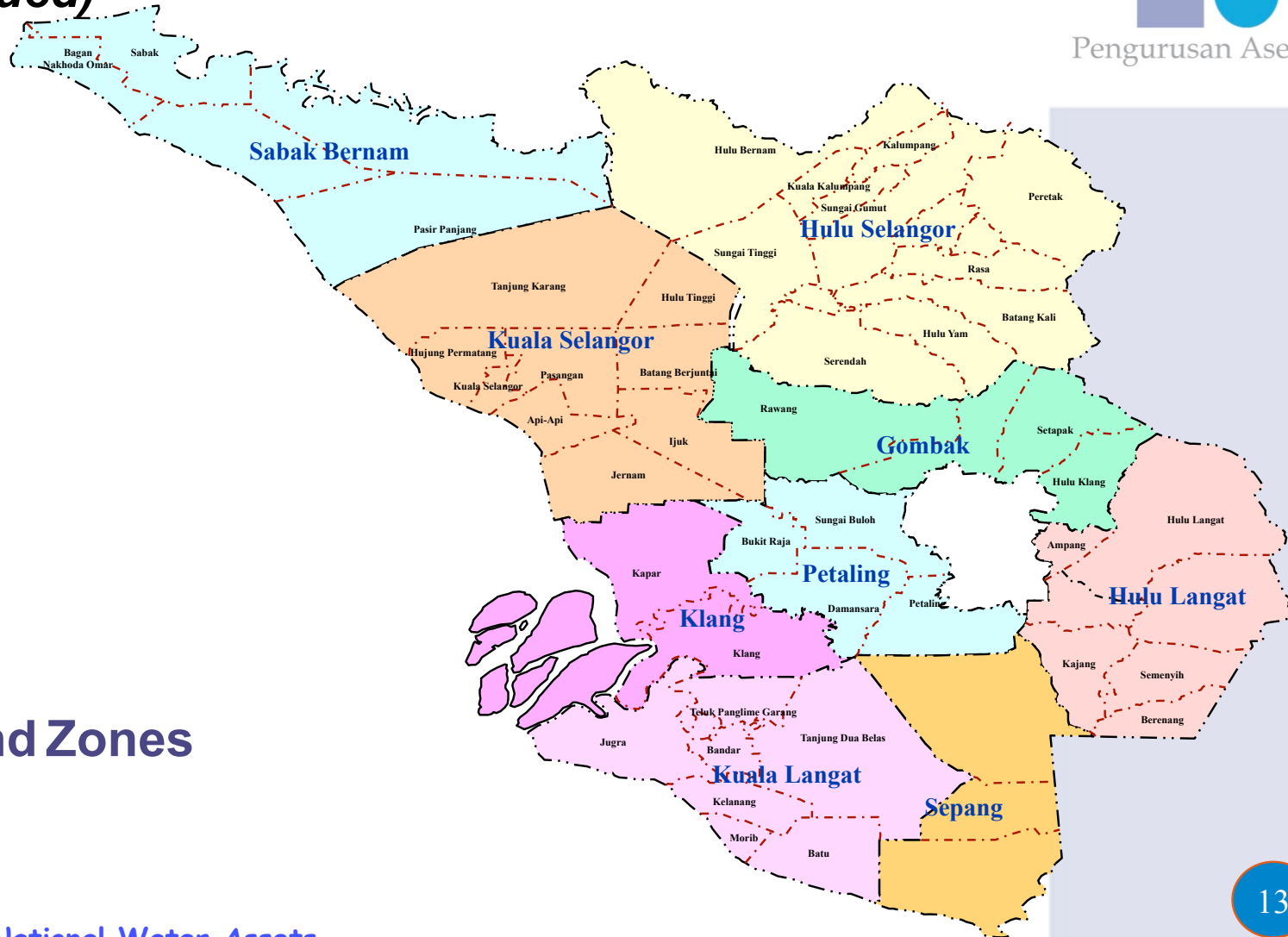
### ❖ DETAILED REVIEW :

- WATER DEMAND ASSESSMENTS BASED ON PREVIOUS FORECASTS AND HISTORICAL WATER DEMAND TRENDS FROM BILLINGS SINCE 2000
- LOCAL STRUCTURAL PLAN AND CENSUS FIGURES
- FORECAST OF DEMAND UNTIL 2030

# CASE STUDY – SELANGOR WATER SUPPLY (Continued)



Pengurusan Aset Air



**Demand Zones**

Custodian of National Water Assets

## CASE STUDY – SELANGOR WATER SUPPLY (continued)



Pengurusan Aset Air

### ❖ COMPARISON OF POPULATIONS

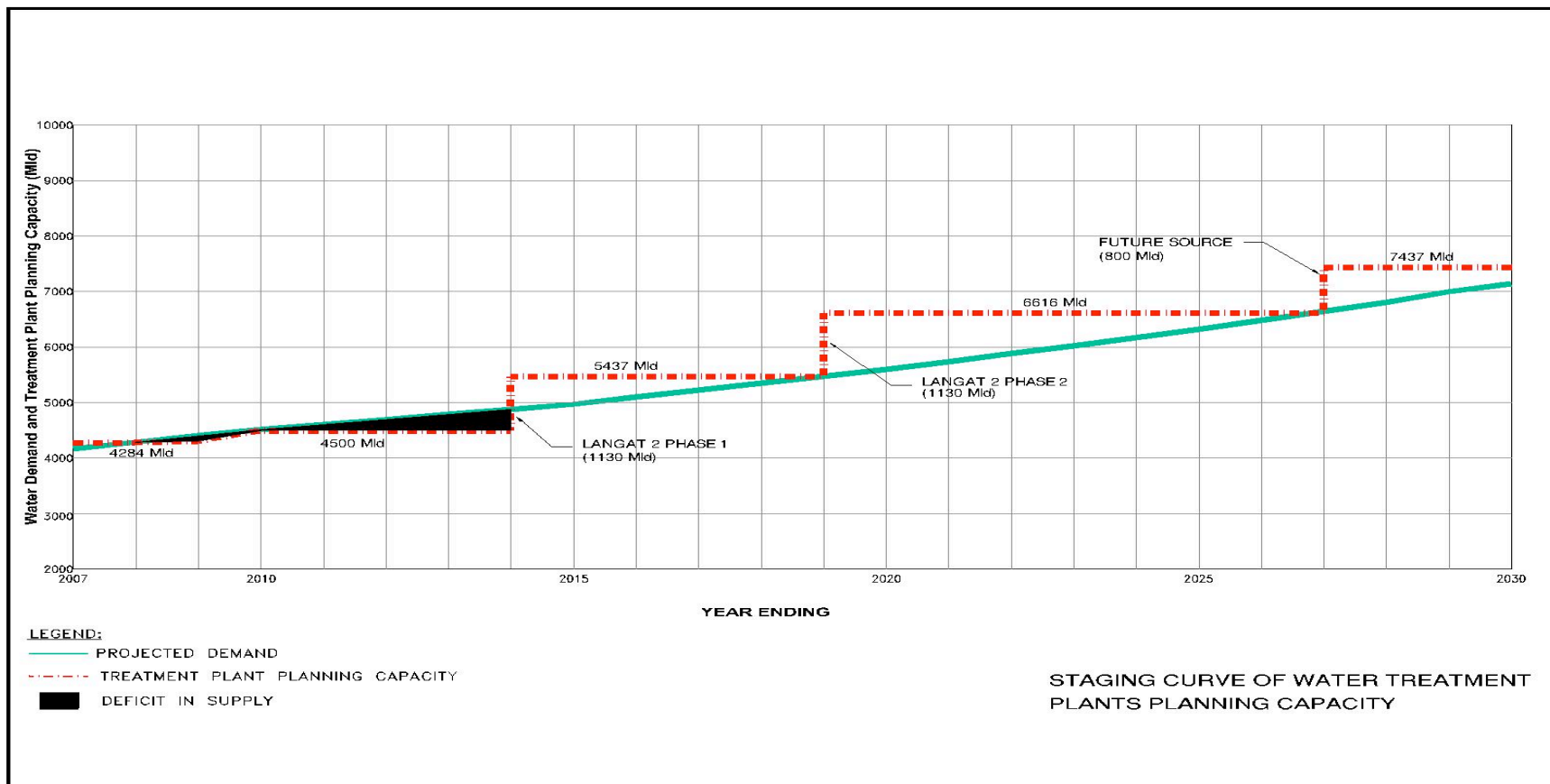
District	Population in 2000 - NWRS	Actual Population in 2000 Census	Population Growth	
			NRWS	1991-2000
Kuala Lumpur	1,677,260	1,305,792	4	1.5
Selangor	3,805,013	3,952,817	3.8	5.7
Gombak	704,971	537,525	4.3	6.9
Klang	650,026	643,436	4.7	4.5
Petaling	1,119,103	1,184,180	6.6	5.6
Sepang	91,478	108,640	7.2	5.0
Hulu Langat	667,879	864,451	7.9	4.8
Hulu Selangor	102,236	147,996		
Kuala Langat	188,198	192,176	3.9	3.5
Kuala Selangor	159,335	161,168	2.5	2.3
Sabak Bernam	121,787	113,245	0.9	1.6
<b>Kuala Lumpur and Selangor</b>	<b>5,482,273</b>	<b>5,258,609</b>	<b>4.5</b>	<b>4.7</b>

## **CASE STUDY – SELANGOR WATER SUPPLY (continued)**

### ❖ COMPARISON OF ASSUMED GDP GROWTH RATES

Period	Assumed GDP Growth Rate			
	NWRS		JBIC	
	SELANGOR	KUALA LUMPUR	SELANGOR	KUALA LUMPUR
2000 – 2005	7.88	6.23	6.2	5.5
2005 – 2010	8.13	6.85	6.2	5.5
2010 – 2015	7.35	6.44	5.5	4.5
2015 - 2020	6.83	5.97	5.5	4.5

# CASE STUDY – SELANGOR WATER SUPPLY (continued)





# ***WATER DEMAND MANAGEMENT***



Pengurusan Aset Air

## ❖ WATER DEMAND ASSESSMENT AND PROJECTION :

- ASCERTAIN SUFFICIENT SOURCE ON LONG TERM BASIS,
- IDENTIFYING URGENT NEEDS AND RESOLVING CONSTRAINTS IN SUPPLY,
- TIMING OF IMPLEMENTATION OF THE WATER SCHEMES AND

Custodian of National Water Assets

QUANTUM AND QUALITY OF SUPPLY REQUIRED

# ***WATER DEMAND MANAGEMENT***



Pengurusan Aset Air

## ❖ CHALLENGES :

- UPDATING DATA ON SOURCE AND SUPPLY,
- GOOD ESTIMATES ON DEMAND AND PROJECTIONS,
- ACCOMMODATING CHANGES IN POLICY,
- CHANGING OF DEVELOPMENT PATTERN AND POPULATION,

# ***WATER DEMAND MANAGEMENT***



Pengurusan Aset Air

## ❖ CHALLENGES :

- ACCURATE GROWTH PROJECTION FOR BOTH INDUSTRIAL AND DOMESTIC DEMAND,
- REPUTABLE COMPUTER MODEL FOR SIMULATING PIPE RETICULATION SYSTEM AND
- RELIABLE ESTIMATES OF PER CAPITA CONSUMPTION

## CONCLUSIONS



Pengurusan Aset Air

- ❖ NEED GOOD INTEGRATED WATER RESOURCE MANAGEMENT (IWRM) FOR A SUSTAINABLE NATIONAL WATER SECTOR.
- ❖ UNDER ONE ROOF CONCEPT I.E. ALL WATER RELATED DEPARTMENTS UNDER ONE MINISTRY.
- ❖ ROAD MAP AND FRAMEWORK FOR IWRM AND INTEGRATED WATER BASIN MANAGEMENT (IWBM).
- ❖ DEVELOPMENT OF TOTAL ASSET DATA MANAGEMENT AND GIS.

## **CONCLUSIONS (continued)**



Pengurusan Aset Air

- ❖ PRESERVATION OF WATER CATCHMENT AND POLLUTION CONTROL.
- ❖ POLITICAL WILL FOR GOOD GOVERNANCE AND ENFORCEMENT.
- ❖ EFFECTIVE PUBLIC AWARENESS / EDUCATION PROGRAM.
- ❖ NEED TO ESTABLISH POLICY/ACT ON IWRM AND IWRB.
- ❖ DEVELOP A WATER DEMAND MANAGEMENT FRAMEWORK

## **CONCLUSIONS (continued)**



Pengurusan Aset Air

- ❖ GOVERNANCE IS DEFINED AS "THE EXERCISE OF ECONOMICS, POLITICAL AND ADMINISTRATIVE AUTHORITY TO MANAGE A COUNTRY'S AFFAIRS AT ALL LEVELS"

IT COMPRISES THE MECHANISMS, PROCESSES AND INSTITUTIONS THROUGH WHICH CITIZENS AND GROUP ARTICULATES THEIR INTERESTS, EXERCISE THEIR LEGAL RIGHTS, MEET THEIR OBLIGATIONS AND MEDIATE THEIR DIFFERENCES.

UNDP, 1997

## CONCLUSIONS (continued)



Pengurusan Aset Air

❖ CONCEPT OF GOVERNANCE WHEN APPLIED TO WATER WILL RAISE DISCUSSION POINTS ON

EQUITY – NEED FOR HOLISTIC INTEGRATED APPROACHES THAT FAIRLY BALANCE USE.

ROLES – NEED FOR CLARIFICATION OF STAKEHOLDERS, ECONOMIC INCENTIVES, STANDARDS CONFLICT RESOLUTION.

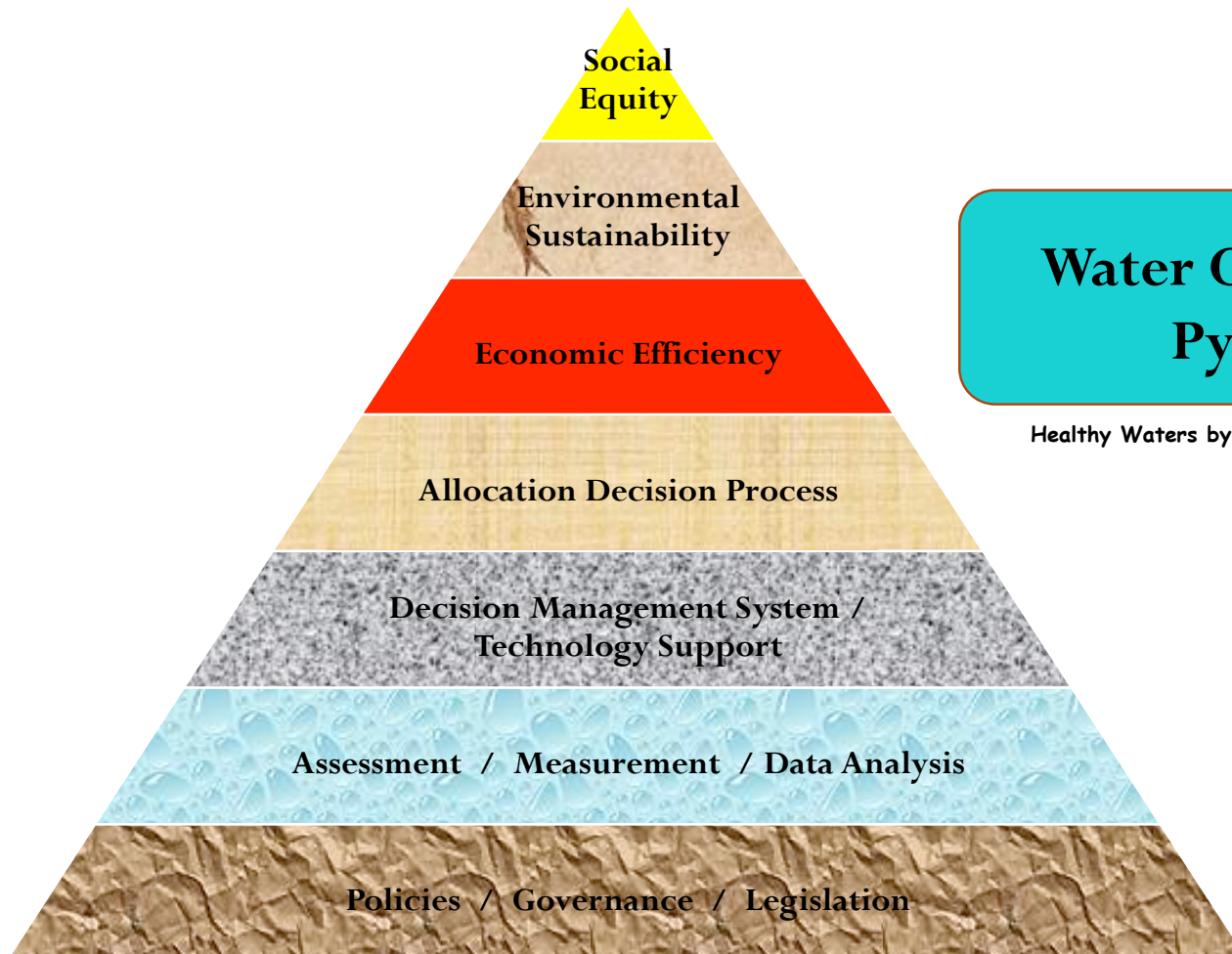
ISSUES – NEED TO CONSIDER PRICING, INCENTIVES, LEVELS OF REGULATION BUREAUCRATIC STRUCTURE.

UN, 2003

## CONCLUSIONS (continued)



Pengurusan Aset Air



### Water Governance Pyramid

Healthy Waters by Mike Magee, MD

Custodian of National Water Assets





Pengurusan Aset Air



*Thank You*

**In time and with WATER, everything changes as thousands have lived without love, not one without WATER.**

**Custodian of National Water Assets**