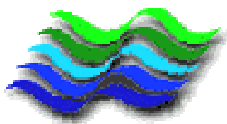


Thematic Workshop on Water-Related Disaster and Its Management

Disaster Management: Malaysian Perspectives

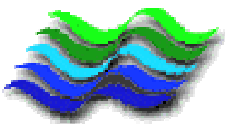
Engr. Ahmad Bin Darus
Senior Assistant Director

DEPARTMENT OF IRRIGATION & DRAINAGE
MINISTRY OF NATURAL RESOURCES & ENVIRONMENT



Contents

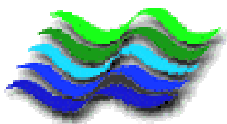
- List of Disaster
- How do we solve it?
- Lessons learned
- Conclusions
- Recommendations



List of Disaster

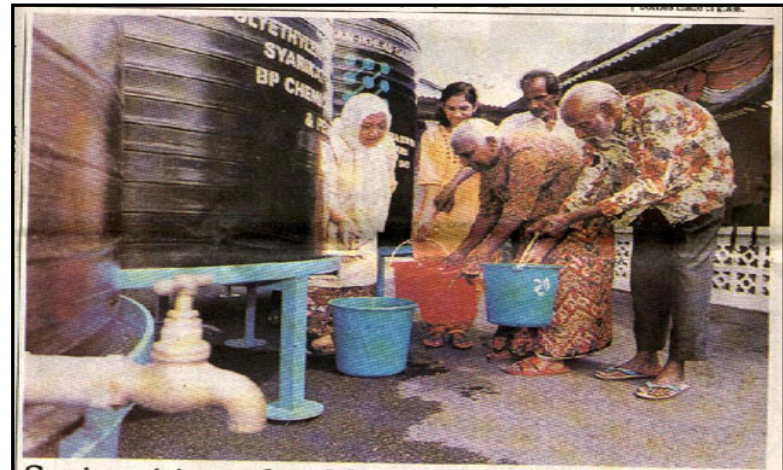
- Flood
 - Flash & Monsoon
- Drought
- Eco-system & Habitat Lost
- Water Quality Degradation
- Others
 - Landslide, coastal erosion

*intense storms dropping large amounts of rain within a brief period.
Floods can be slow, or fast rising but generally develop over a period
of days.*





Flood



Senior citizens hard hit by water rationing

GOING BACK IN TIME ... Water rationing causes hardship to everyone, more so to the old and incapacitated as this picture taken by Nam Strauss Times photographer Ahmad Ghazali shows. Although the inmates of Rumah Seri Kemangan at Jalan Sungai Long, KM18 Jalan Cheras receive supply from two tanks, they still have to carry the water. Just like the days when they were required to fetch water from wells, Manalab Radzi, 72, (from left) Nancy Mohdhar Mohamed Asraf, 41, R. Rajammal, 70, N. Rosman, 70, and S. Purnamasary, 80 are seen here with their jerrycans collecting water from the tanks at the home. Rumah Seri Kemangan was one of the 13 welfare organizations which received water tanks, with a capacity of 2,700 litres each, donated yesterday by Polyethylene Malaysia Sdn Bhd, a Petronas-Df Chemicals joint venture company.

Drought



Dry spell can hit Kedah's 63,000 padi farmers soon

Planting season delayed by a month

By Abdul Razak Ahmad
razak@nstp.com.my

ALOR STAR, Wed. — The current dry spell, which has led to water shortages in several states, can soon affect Kedah's 63,000 padi farmers.

Authorities are delaying the next padi planting season by a month while awaiting water levels at its three dams to rise.

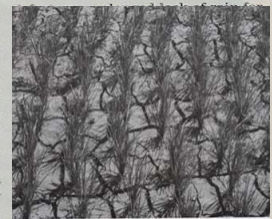
The Muda Agricultural Development Authority (Mada) deputy Engineering Department head Teoh Weng Chaw said water from the dams would be released for use in padi planting in three stages, beginning on March 25 followed by April 4 and 14.

Teoh said Mada originally scheduled to begin releasing the water from Friday, but decided to delay it as the water levels were currently lower than at the same time last year.

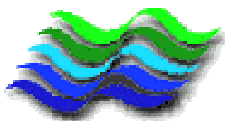
"As such, we hope the farmers will take extra measures to prevent wastage of the water."

Padi farmers in Kedah plant twice a year, with each seeding exercise spaced about six months apart. The next padi planting season is in September.

Teoh said although the water levels at the dams were currently sat-



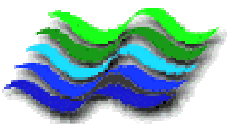
Copyright: THE HONG KONG TIMES, 2000

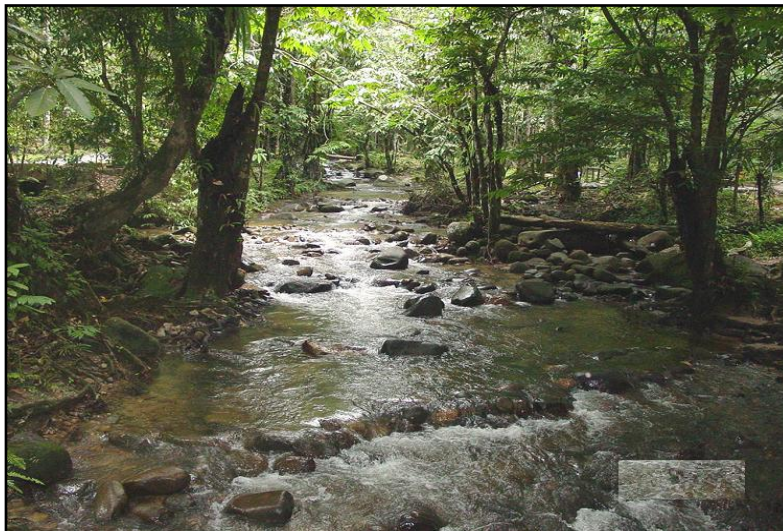


Eco-system & Habitat Lost



Rapid disposal approach



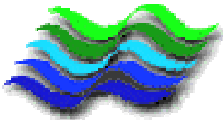


Maintaining habitat, vegetation
and physical characteristics
(Eco-system)

Healthy Bio-diversity



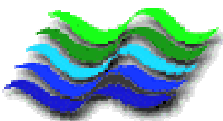
Effect cycle



Water Quality Degradation



Pollution Sources



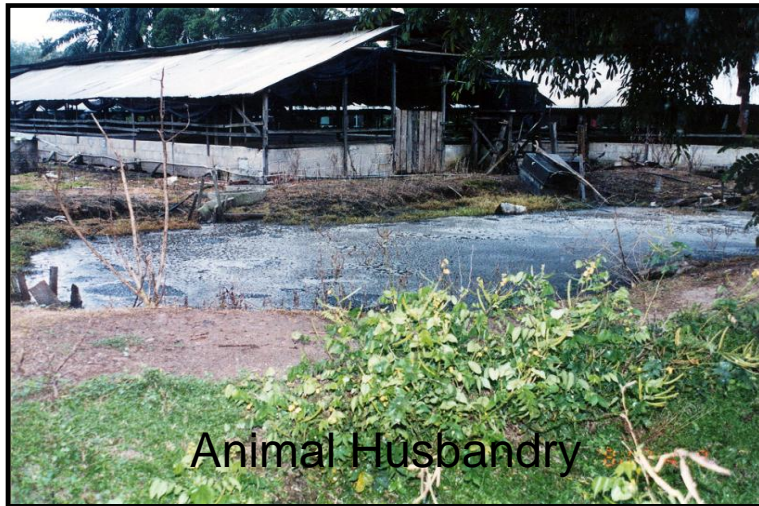
Pollution Sources



Sewage Treatment Plant



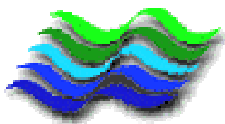
Slaughter House



Animal Husbandry

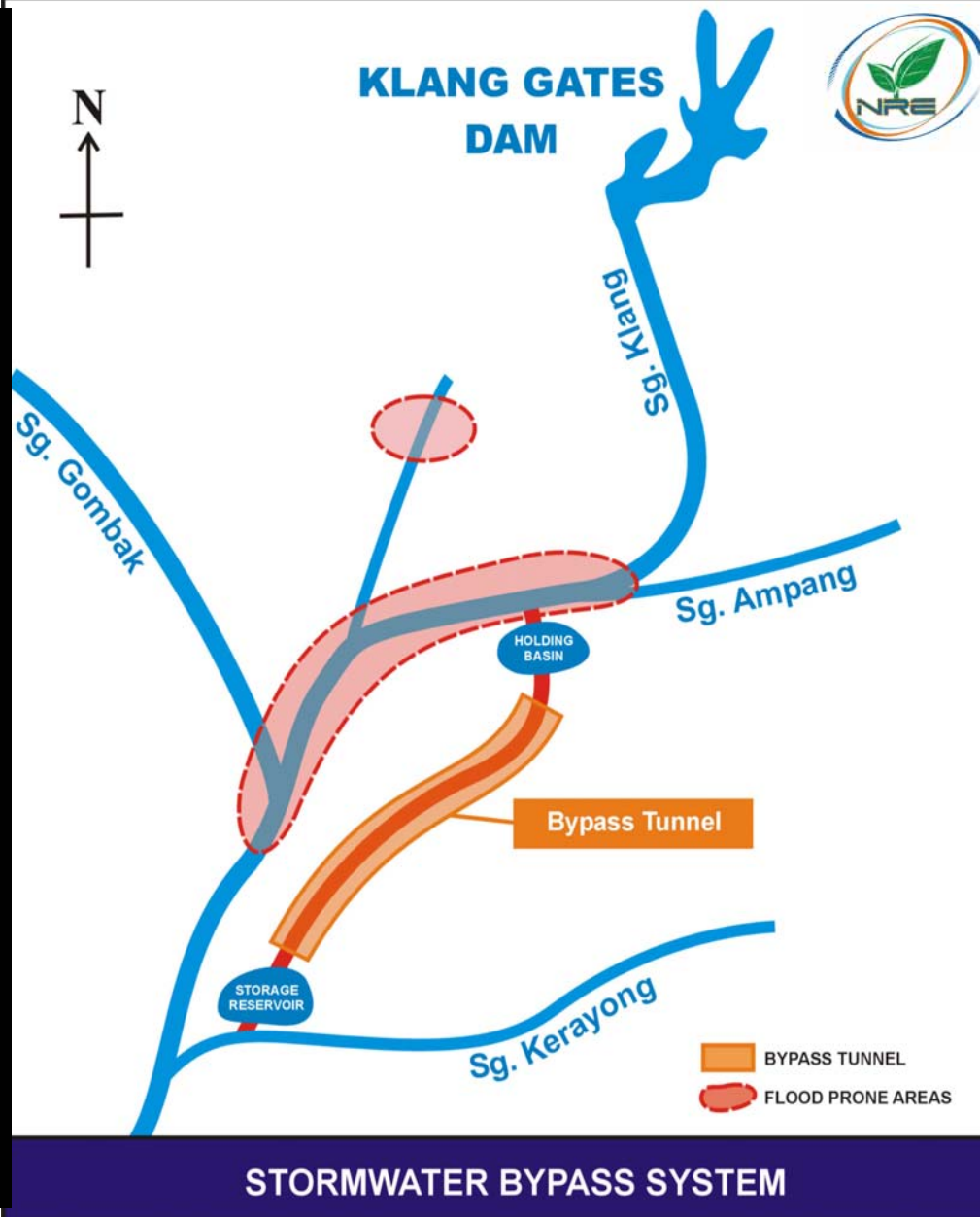


Landfill Areas



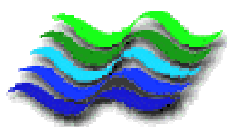
SMART (Stormwater Mgt and Road Tunnel) proposed as structural solution

- cost 1.9 Billion Ringgit
- privatised road tunnel 3 km in middle
- stormwater tunnel length 10 km
- expected usage 2 – 5 times a year
- dual function
- started 2003
- completed 2007

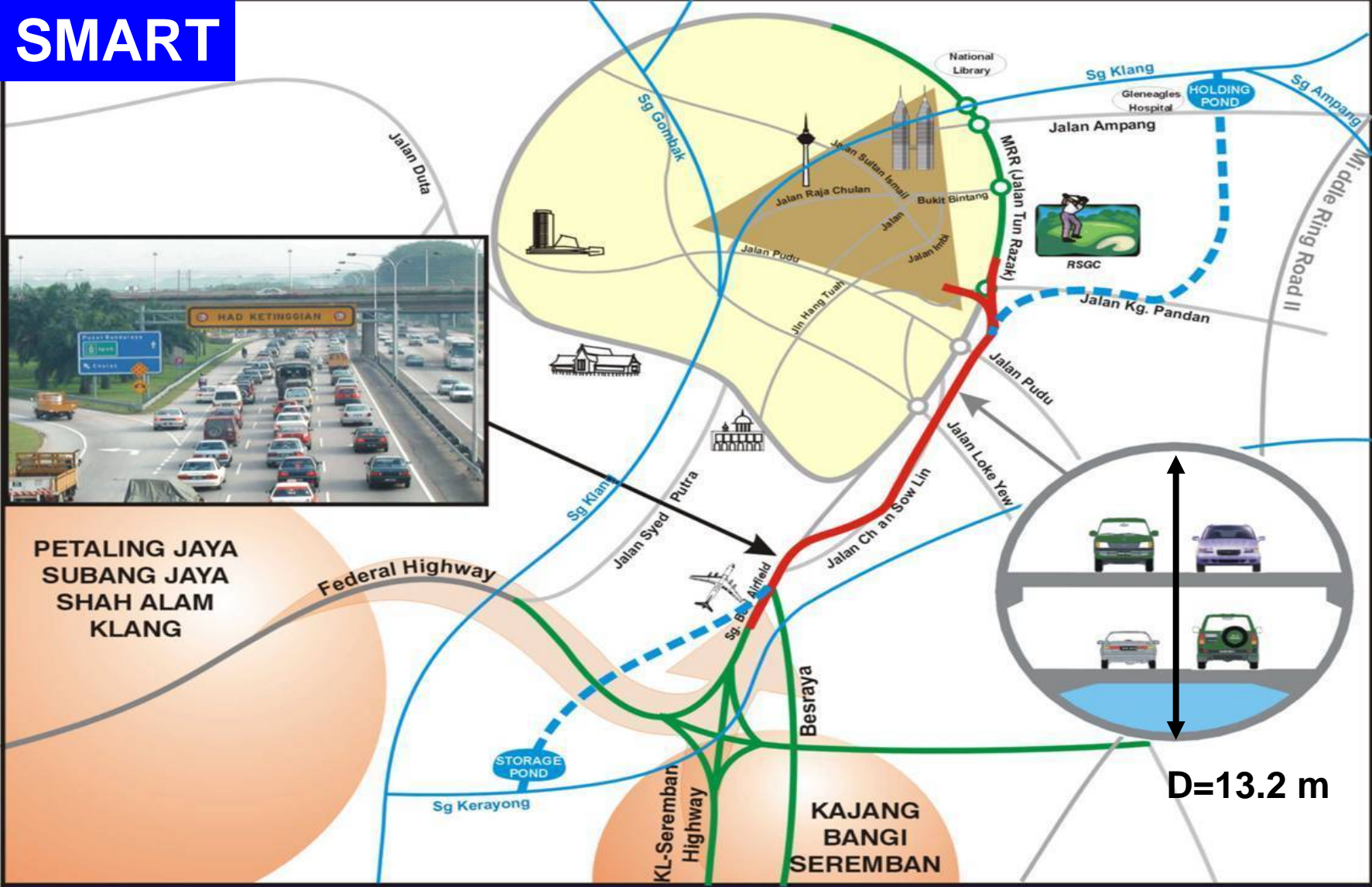


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148 cumec
440 cumec



SMART

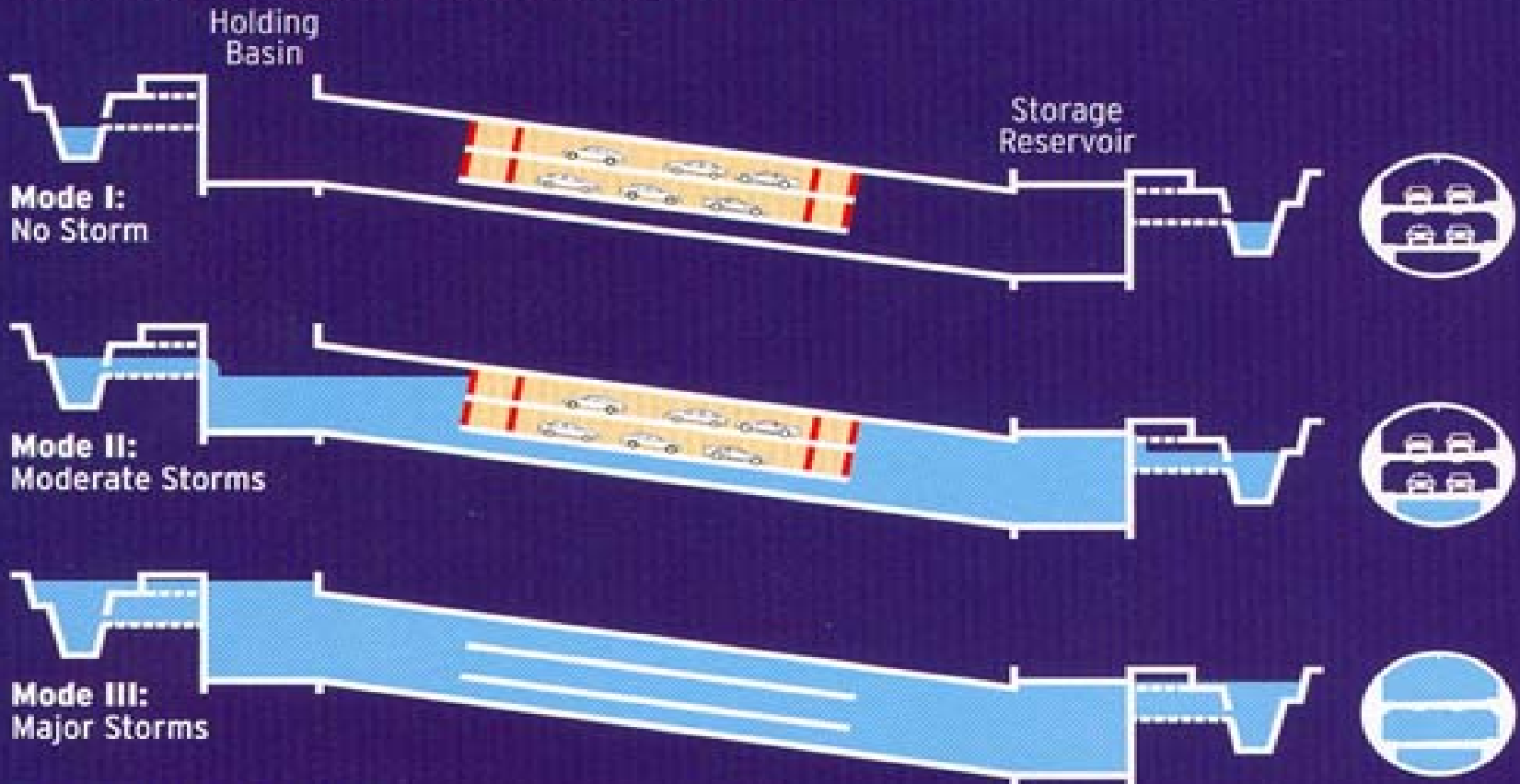


ALIGNMENT OF SMART

DEPARTMENT OF IRRIGATION & DRAINAGE
MINISTRY OF NATURAL RESOURCES & ENVIRONMENT



Operational Modes of the SMART Tunnel



Total Storage Capacity
3 million cubic meters at 3 main components

Sg Klang			Sg Kerayong		
Inlet 600,000m ³	Northern Section	Motorway Tunnel 250,000m ³ (8%)	Southern Section	Outlet 1,400,000m ³	3,000,000m ³
		750,000m ³			

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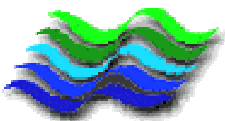
TBM No.1 – SOUTH DRIVE



Tunnel Boring Machine break-through, June 2005

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2007

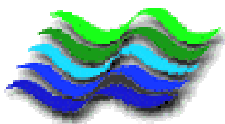


SG. BATU FLOOD DETENTION POND



Utilized Ex-Mining Pond

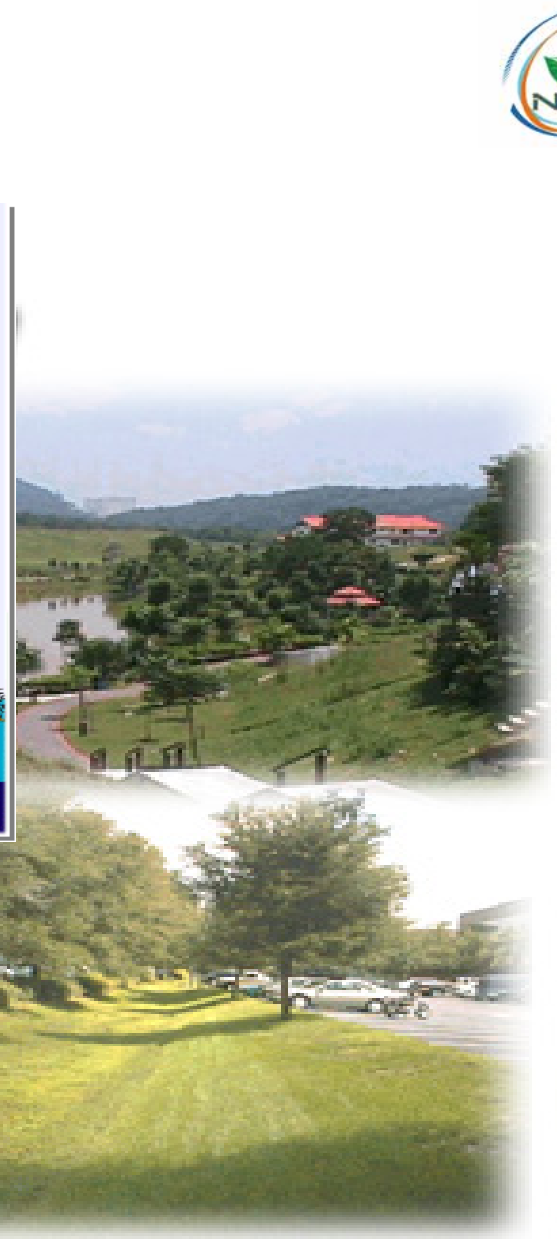
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FLASH FLOOD CONTROL

USMM

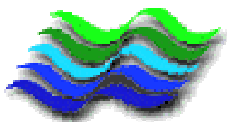
- Mandatory Jan 2001
- 49 chapters, guide
- Source control
- Detention, retention
- Infiltration
- Rainwater Harvesting
- Planning, earthworks
- etc



Rainwater Harvesting



2007

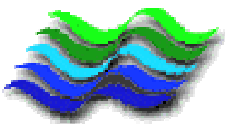


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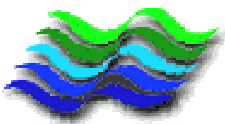
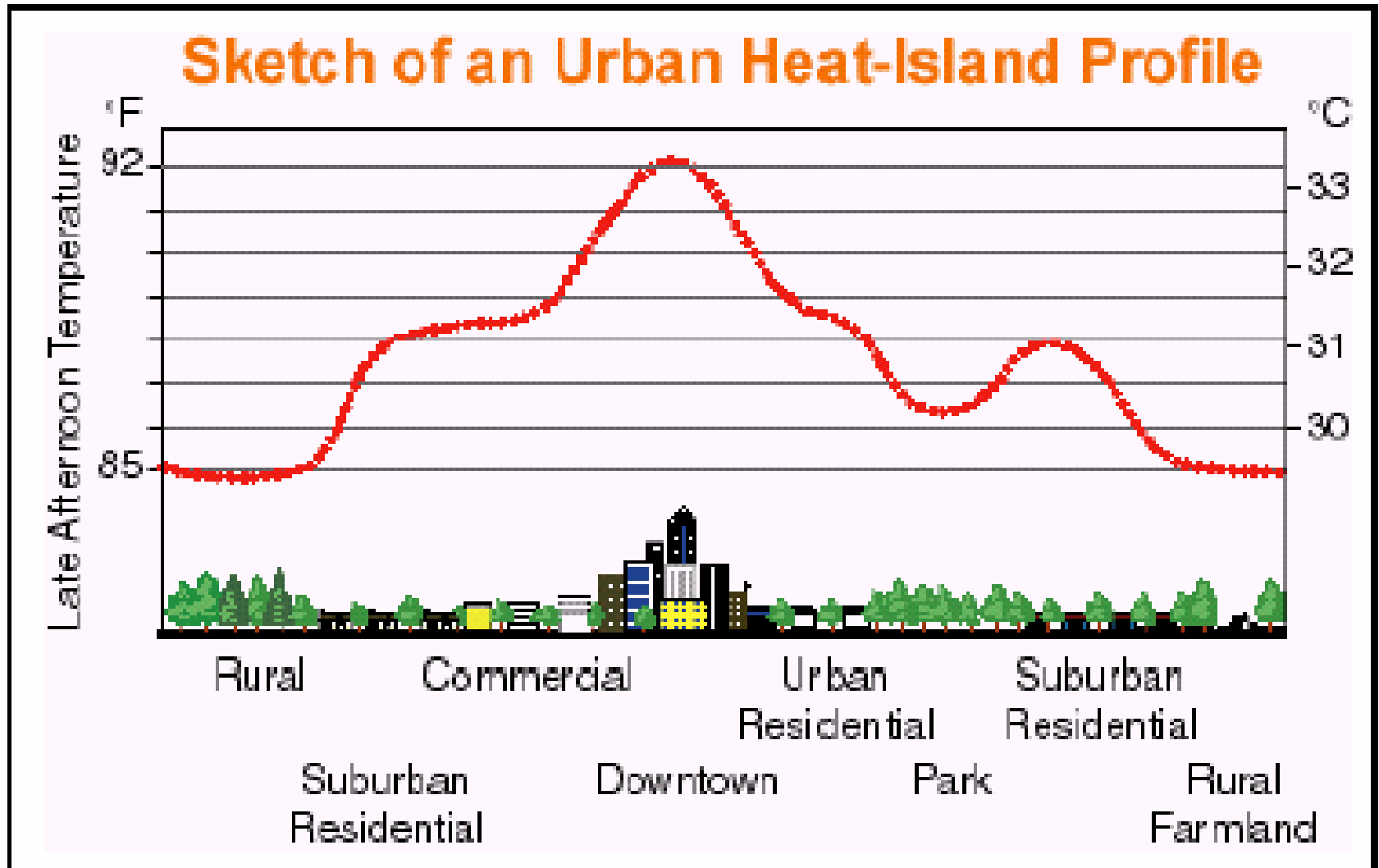
Definition of Urban Heat Island (UHI)

“An area of higher temperatures in an urban setting compared to the temperatures of the suburban and rural surroundings. It appears as an ‘island’ in the pattern of isotherms on a surface map.”

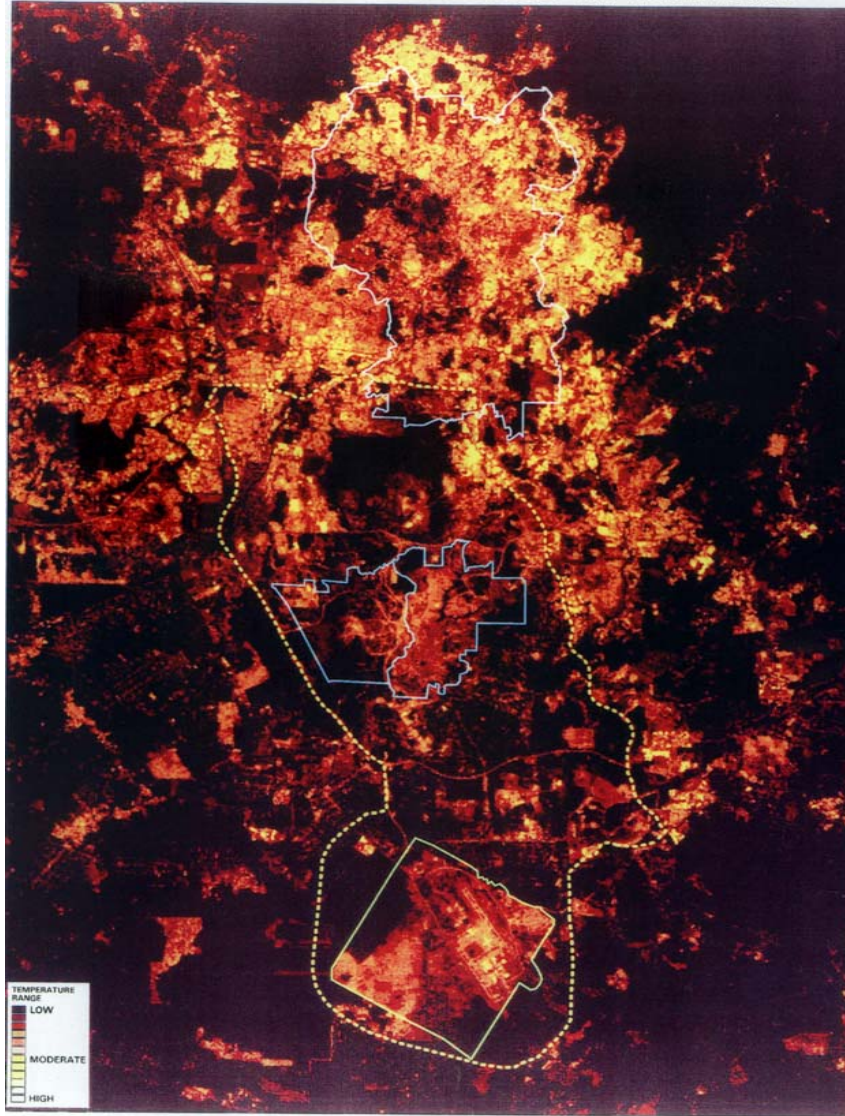
- Glossary of Weather and Climate, Ira Geer, Ed.



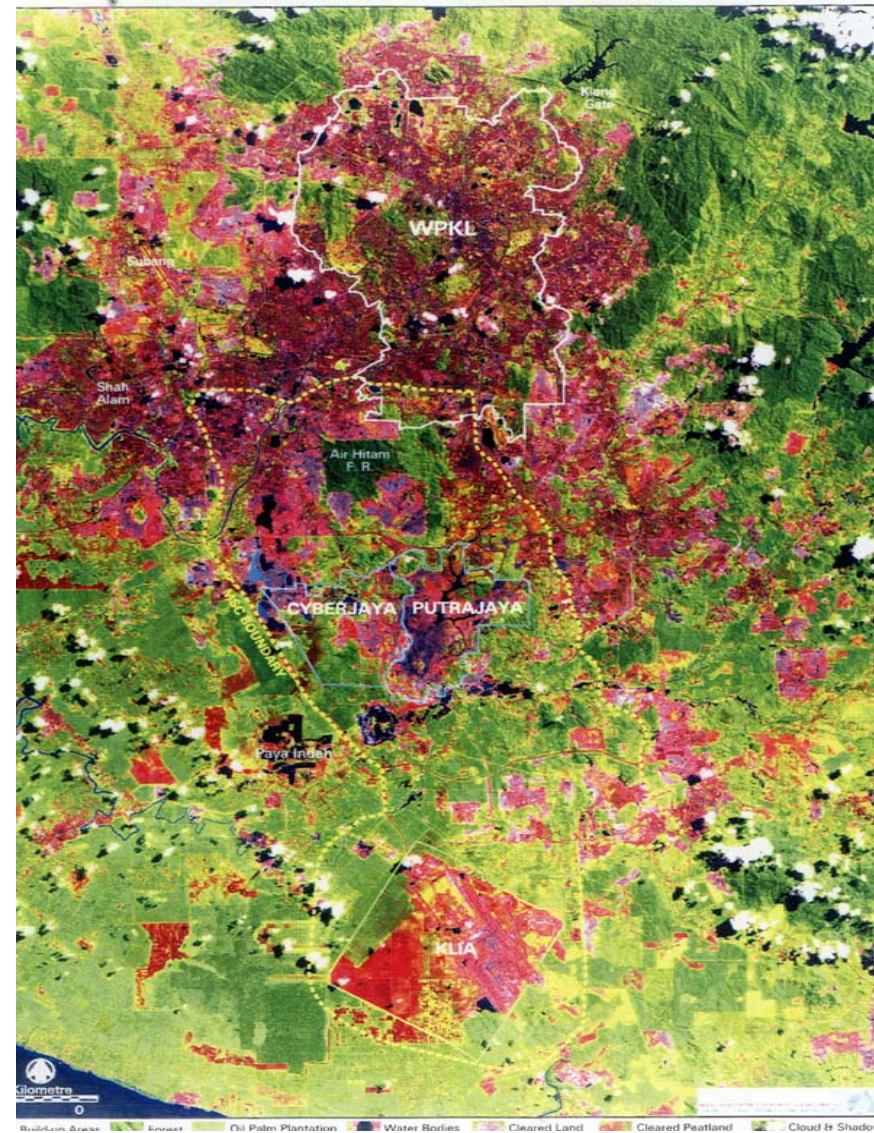
Profile of UHI



LAND SURFACE TEMPERATURE FROM LANDSAT ETM THERMAL BAND

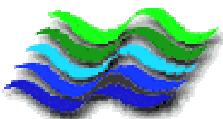


LANDSAT ETM IMAGE ACQUIRED ON 31 MAY 2001



Satellite image of UHI's in Kuala Lumpur

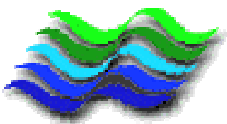
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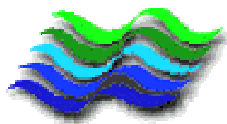
Warm air rising forming storm clouds

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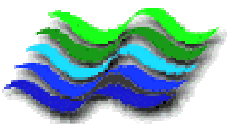
Storm showers can be pushed down wind



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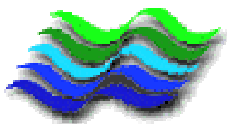


Greenery Roof



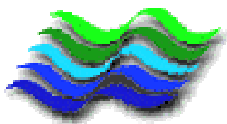
Drought

- Manage flood water – divert to pond
- Control watershed area
- Recycle water - irrigation



Eco-system & Habitat Lost

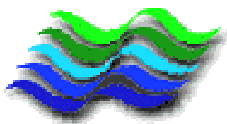
Water Quality Degradation



One State One River Program

- Management
 - River Management Committee
- Curative
 - Structural Programme
 - Rehabilitation Project
- Preventive
 - Non Structural Programme

Community participation

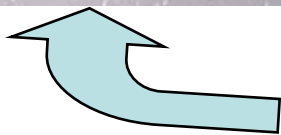
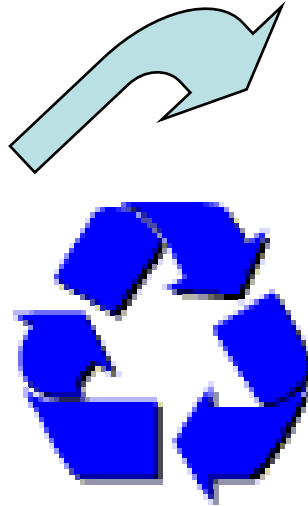


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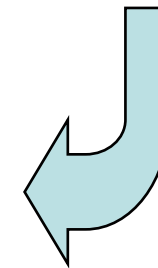


Drains and waterways that flows to the rivers?

Where do our drinking water come from?



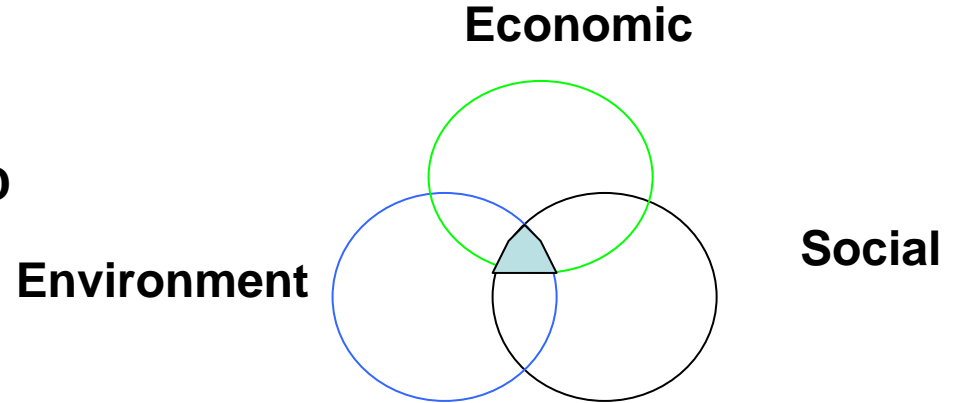
97% from rivers



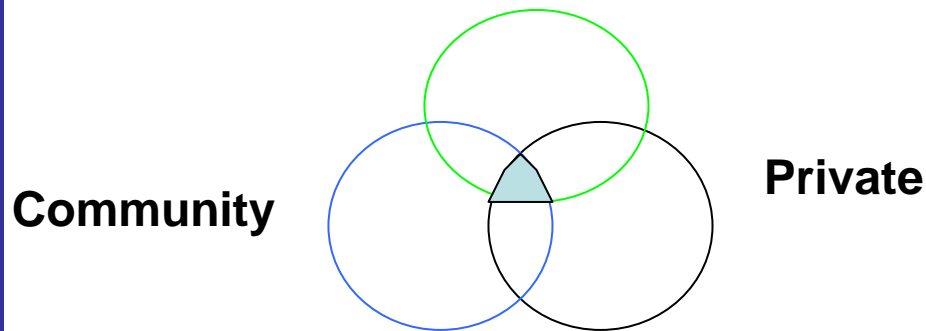
From where the rivers get their water?

REMINDER

Environment is a gift from **GOD**

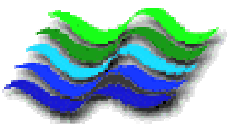


Government



The main polluters is **HUMAN**

The solution must be **HUMAN**

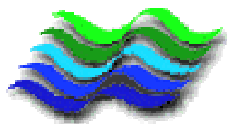


Activities of Community Involvement



Objectives;

- Enhance awareness and knowledge in managing rivers
- Provide skill in river monitoring
- Initiate a systematic and scheduled monitoring programme
- Develop data base
- Develop Smart Partnership between community, NGO's etc



CIVIC SCIENCE



Awareness

Exhibition, Poster,
Workshop, Seminar



Knowledge

CD, Books, Website,
Newsletter

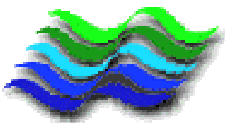
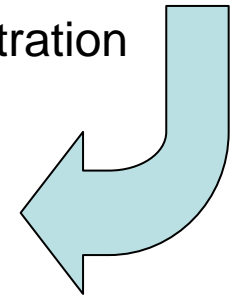


Expertise

Training,
Demonstration

Action

- Prevention
- Monitoring Pollution & Activities
- River Auditing



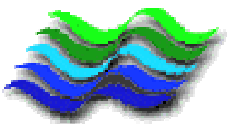
River Rangers



Agencies, Teacher &
Community Involvement



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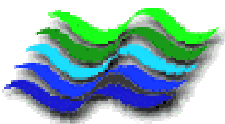


School Children

River Rangers



2007



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SG. JURU

Community Websites

conservation portal and resource centre

[Back to Home](#)

[Objectives & Mission](#)

[Info on Sungai Juru](#)

[Photo Album](#)

[River / Pollution](#)

[Resources](#)

[Useful Links](#)

[Activities](#)

[Versi Bahasa Malaysia](#)

Welcome to SungaiJuru.com

a conservation portal and resource centre on Juru River, Penang, Malaysia.

[View Penang Map](#)

[Location Map Of Sungai Juru](#)

[Aerial view of Sungai Juru](#)



Tan throws Sungai Juru a much-needed

Launching of Penang Environmental Quiz Contest 2007

A press briefing has been held at Dewan Orangramai Rukun Tetangga Taman Bukit Minyak on 24th April 2007. YB Puan Ng Siew Lai, the state assemblyman for Bukit Tengah area and Chairman of LA21 Healthy Lifestyle, Security and Environmental Working Group for Bukit Tengah area ...

Posted on 25 Apr 2007 by admin

[Read more](#) • 0 Comments

Proposal to upgrade Sungai Juru Dam area into Riverfront recreational park

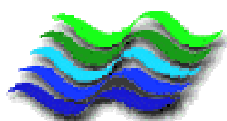
A letter of proposal has been submitted to Jabatan Pengairan dan Saliran (JPS) Negeri Pulau Pinang by Rukun Tetangga Taman Bukit Minyak on 2nd Feb 2007 to upgrade the existing vacant JPS Reserved Land along Jalan Persekutuan near to the Sungai Juru Dam area into a riverfront recreational park. ...

Posted on 05 Feb 2007 by admin

[Read more](#) • 0 Comments

Public Objections Hearing on Penang Structure Plan 2005-2020

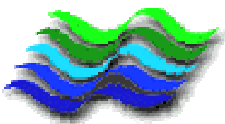
A presentation has been made to the Public Objections Hearing Committee of the Penang Structure Plan



Benefits from the RR Activity

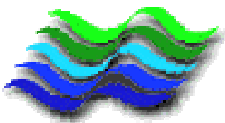


- Ears and eyes of the government
- Sharing information
- Ownership



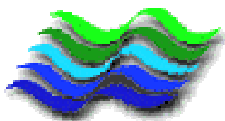
Lesson Learned

- We need structural and non-structural measures to manage disaster
- Learn from history



CONCLUSION

- Floods can be managed effectively if we look the issue holistically
- Community involvement is vital in disaster management



Recommendations

- NARBO should have a data base of all experts from Asian Countries
- Asian countries that have special projects should invite other fellow countries to participate
- Should share knowledge among us and sincere in disseminate information

