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**The Third NARBO Training Workshop**

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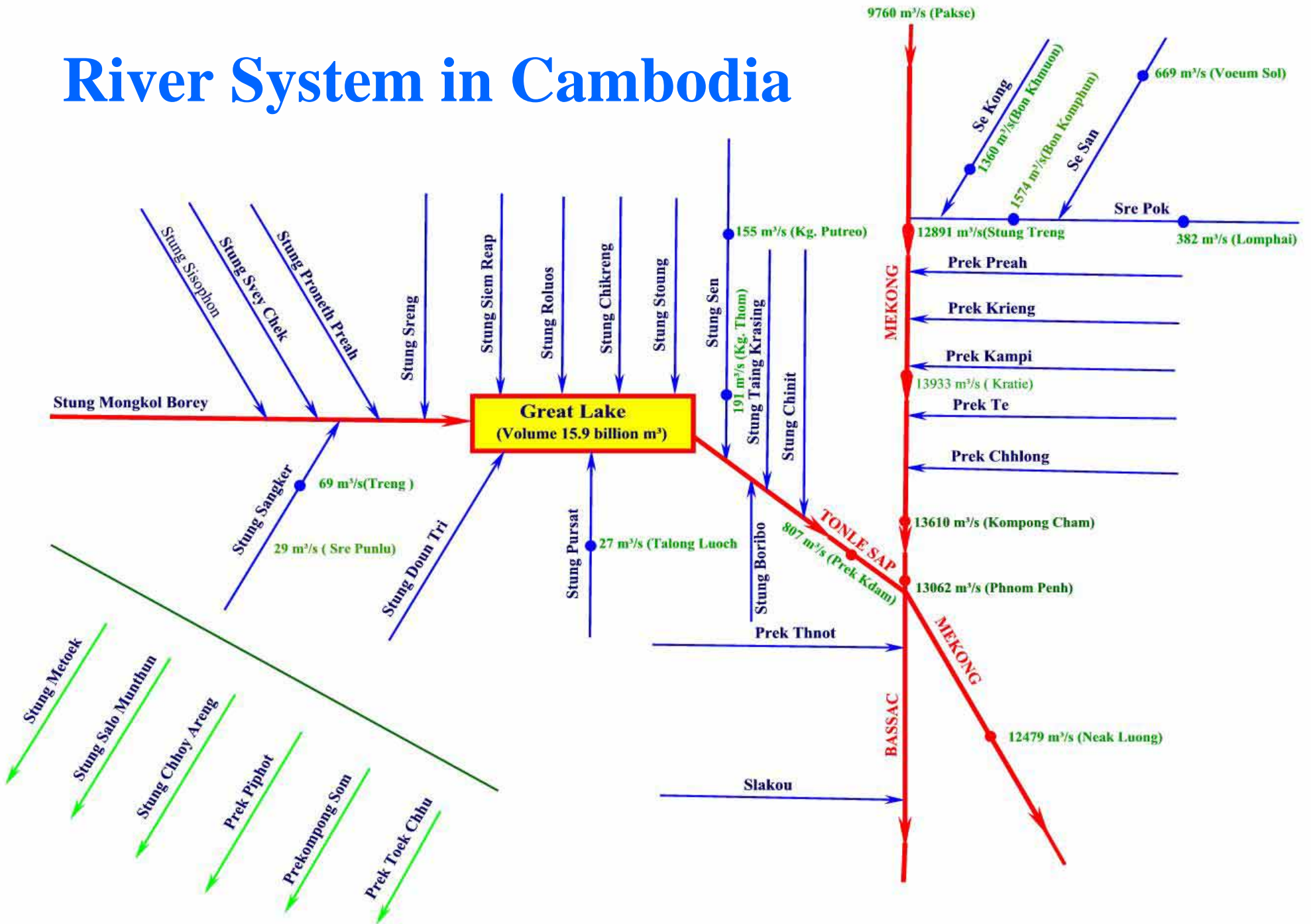
**Water Resources Management in Cambodia**

Daejeon, Korea

14-18 November 2005



# River System in Cambodia



# Water Resource Potential in Cambodia

Water Resources	Power (MW )	Irrigated areas (ha)
Main Stream	10,800	734,000
Mekong Tributaries	2,727	253,000
Mekong Flooded Area	-	179,000
Tonle Sap Tributaries	306	358,900
Outside Mekong Basin	1,146	142,000
Total	14,979	1,667,300

# Institutional Basis For River Basin Management .

1. Ministry of Water Resources and Meteorology
2. Ministry of Industry, Mine and Energy
3. Ministry of Rural Development
4. Ministry of Public Work and Transport
5. Ministry of Environment
6. Ministry of Agriculture, Forestry and Fisheries
7. Cambodia National Mekong Committee
8. Cambodia National Disaster Management Committee

# Government Policy on water resources

The RGC has adopted water policy and has drafted law on water resources and regulations under water law :

- Sub degree on water allocation and Licencing
- Sub degree on River basin management
- Sub degree on PIMD/IMT

as a basis to ensure the use of the Nation's water resources in an effective , sustainable and equitable manner.

## Three main key point from the water policy :

1. River basins shall be managed and developed following an integrated approach.
2. The sustainable use of water resources shall be promoted, through the preparation of short, medium and long term plans.
3. Collaboration and participation among RCG institutions, private sector, NGOs, stakeholders, beneficiaries at all levels shall be promoted.

# **Institutional Issues**

- MOWRAM is responsible for River Basin management and development in the whole country, but lacks capacity and legislative framework.
- Lack of coordination among line agencies working in the water sector.
- Overlapping responsibility and functions .
- RBOs not yet established.
- However, a RBO is to be established in the whole Tonle Sap River basin, and:
  - under the NWISP we will establish a “multi-user committee” in a small sub-basin, to help in sharing water.



# Issues related to floods and droughts

- Flooding along the Mekong River is a recurrent event.
- Drought also affects the Cambodian people almost every year.
- During the annual flood there is too much water, but in the dry season there is a shortage of water and low flow.

# Issues related to water quality

- Cambodia's water quality is good, particularly during the wet season.
- During the dry season and downstream from population centres, surface waters can be heavily contaminated.
- Some deep groundwater wells have high levels of arsenic, fluoride and total hardness, and there is contamination of shallow aquifers.

## Issues relating to water use

- In the wet season water is abundant, and the main issue is excess. In the dry season , water shortage occurs in many localities.
- The main instances of competition are at community level among rice farmers and fisher people, and between upstream and downstream farmers along a river system.
- Competition can easily grow into conflict and sabotage , but at present it is managed more or less effectively by villages and communes.

# Data and information issues

- Data and information are very important for preparation of project implementation and plans
- Shortage of data and information
- Shortage of hydro-meteorological stations

With assistance from others partners such as WB ADB JICA KOREA, particularly MRC data and information are being improved.

# Issues on Environment

- The principal environmental issues have been considered in the National Water Resources Policy and National Environmental Action Plan.

The two most important issues from water resources perspective are:

- 1- Management of forests, fisheries, water quality, aquatic ecosystems and floodplain agriculture in the Tonle Sap Great Lake basin.
- 2- Management of the impact on residual flows of growing demand for water by many different users, especially in the dry season.

# Trans-boundary issues

- Because of resource development by upstream countries, Cambodia faces trans-boundary water problems such as:
  - Se San River Basin with Vietnam
  - Svay Chek and Mongkol Borei river basin in Northwest of Cambodia with Thailand
  - Mekong Agreement for main Mekong River
  - Bilateral agreements

# Effect of Mekong River flood in year 2000 to National Road network



- Collapse of embankment of national road No 1 by overland flow from right bank side of Mekong River during the flood in year 2000

Prek Thnot Flood Control Dike was cut by year 2001  
Stung Prek Thnot River Flood, in Kandal Province





National Road 2 was inundated (overflowed) by year  
2001 Stung Prek Thnot River Flood, in Kandal  
Province



Bridge on the National Road 6A was collapsed by year 2001 Mekong River Flood, in Kompong Cham Province



National Road 2 was inundated (overflowed) by year 2001 Stung Prek Thnot River Flood, in Kandal Province





## **Tuk Thla Regulator**

(originally constructed under Pol Pot Regime)

25 Gates

$Q_{\max} = 260 \text{ m}^3/\text{s}$



## **Kompong Tuol Regulator**

(originally constructed under Pol Pot Regime)

6 Gates

$Q_{\max} = 110 \text{ m}^3/\text{s}$



**Main Canal ( Pol Pot 63 )**  
(constructed under Pol Pot Regime)  
Trapezoidal Earth Canal  
Command Area:  $A=1950\text{ha}$



## **Tertiary Canal T3.2.0**

(constructed this dry season)

**Trapezoidal Earth Canal**

**L=850m**



**THANK YOU FOR YOUR ATTENTION**