

# Asian Water Cycle Initiative AWCI

Beppu, Japan, 02-04 December, 2007

Demonstration Project  
for Stung Sangker River  
Basin for  
Flood and Water Resources Management

SO IM MONICHOTH

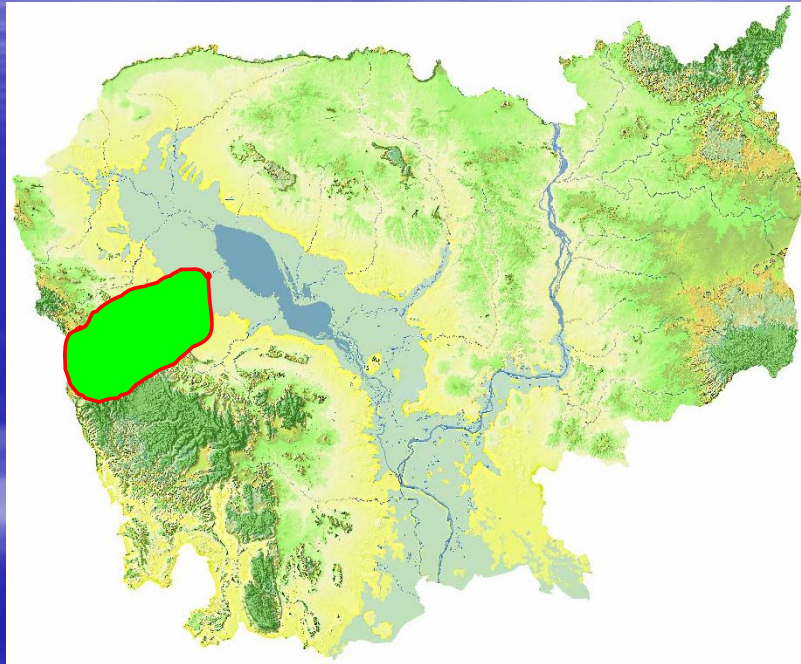
Department of Hydrology and river Works (DHRW), Cambodia

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# 1. INTRODUCTION

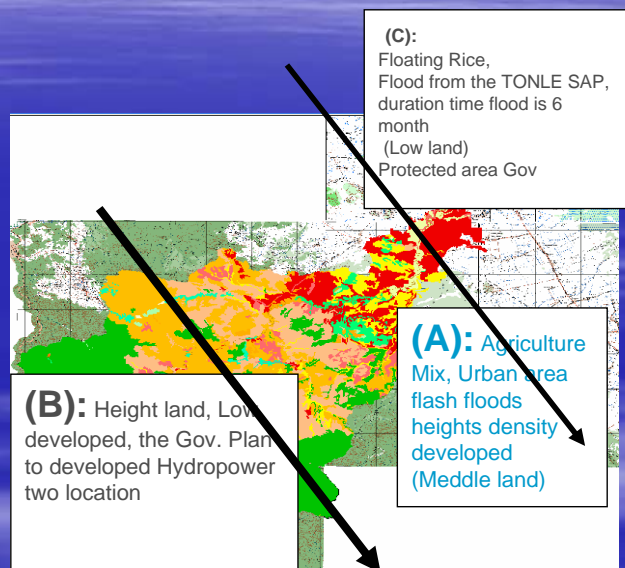
- One river contributes flow into Great Lake.
- Located Battambang Province at southwest of Cambodia
- The basin area 2960.955 km<sup>2</sup>
- Average annual rainfall about 1,500 mm
- Population 800,000, year 1998
- Estimated people effected by the flood is about 142,000, 60 village 24 communes in flood year 2000



## LANDUSE AND SOIL

Landuse	% area
1. MEDM	30.86
2. EMLD	20.14
3. BAMB	0.00
4. WSDR	9.02
5. WSEV	3.93
6. AGRI	15.79
7. DECD	20.26

SOIL	% area
1. ACg	11.05
2. CMd	1.25
3. CMe	15.37
4. LVg	7.79
5. LPd	16.54
6. LPe	12.67
7. CMe/LPe	35.32



# Topography and GIS data

- Min. Elevation: 9 m
- Max. Elevation: 1362 m
- Mean. Elevation: 225.981 m
- DEM with 50 m grid resolution
- River networks, roads, catchments, administrative boundaries

## 2. OBJECTIVES

- *To studies the impact of flash flood in case heavy raining*
- *To manage the water resources*





### 3. DATA AVAILABILITY

- Flow
- Water levels
- Rainfall
- Humidity
- Temperatures
- Wind Speeds
- Solar Radiation

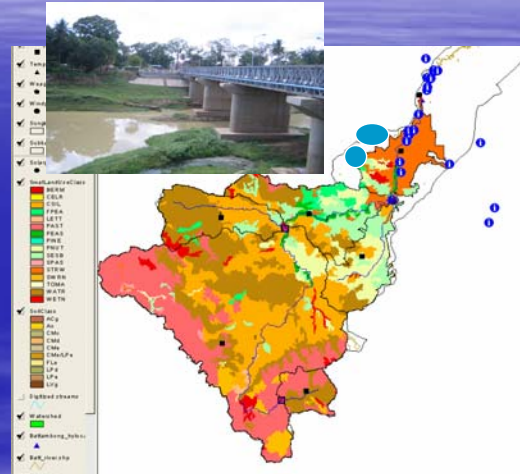
# Irrigation data

Potential Area (ha) for  
wet and dry seasons

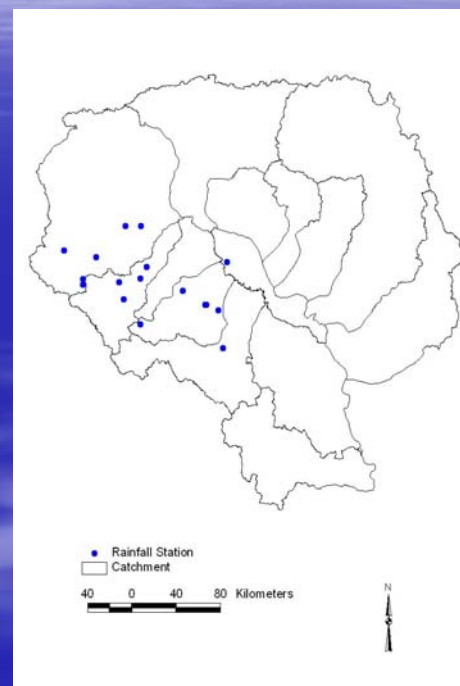
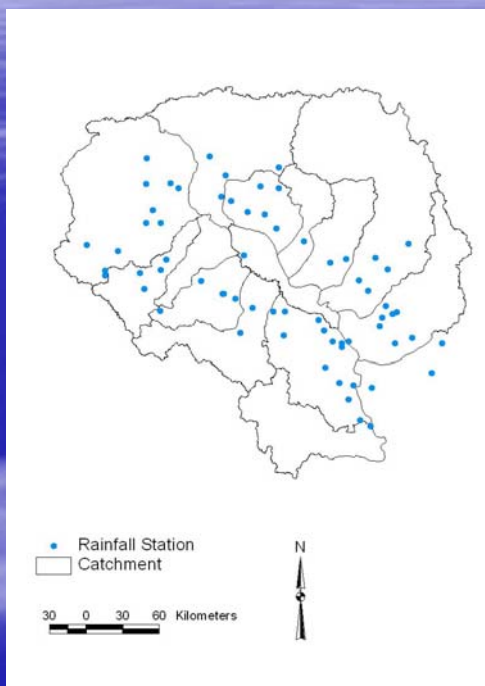
Wet: 42,000 ha

Dry : 1,400 ha

Two hydropower have  
been planted with the  
irrigation areas 37,000  
ha

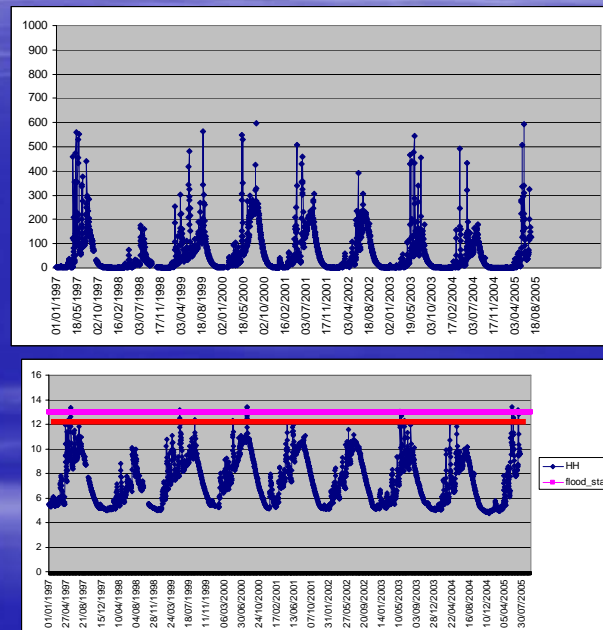


# Rainfall Station



# Cont.

- Flow and water levels data at Battambang Hydrological station in Stungsangker river



## 4. MODEL APPLICATION

Hydrological Model

SWAT

Basin Simulation Model

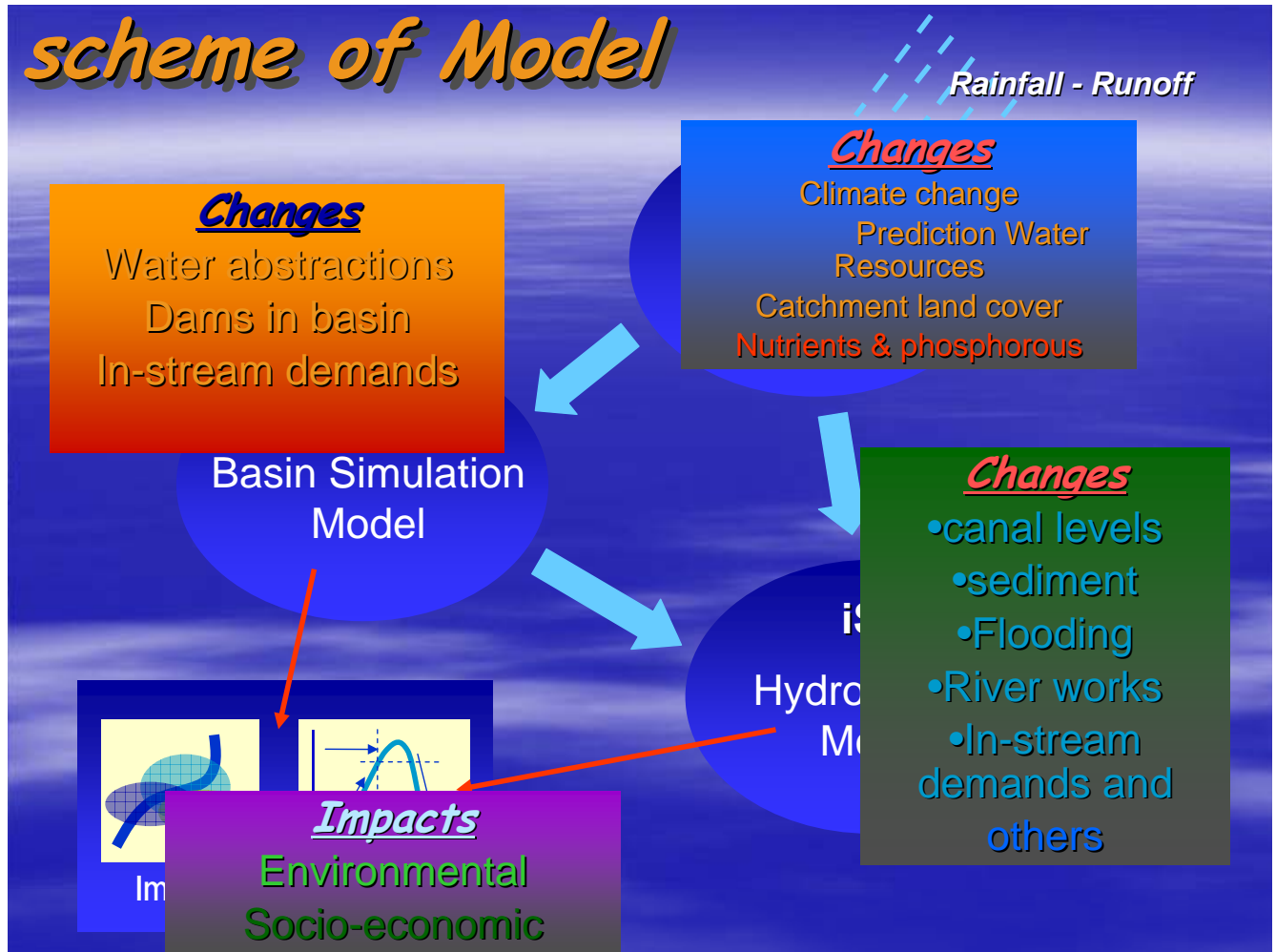
IQQM

Hydrodynamic Model

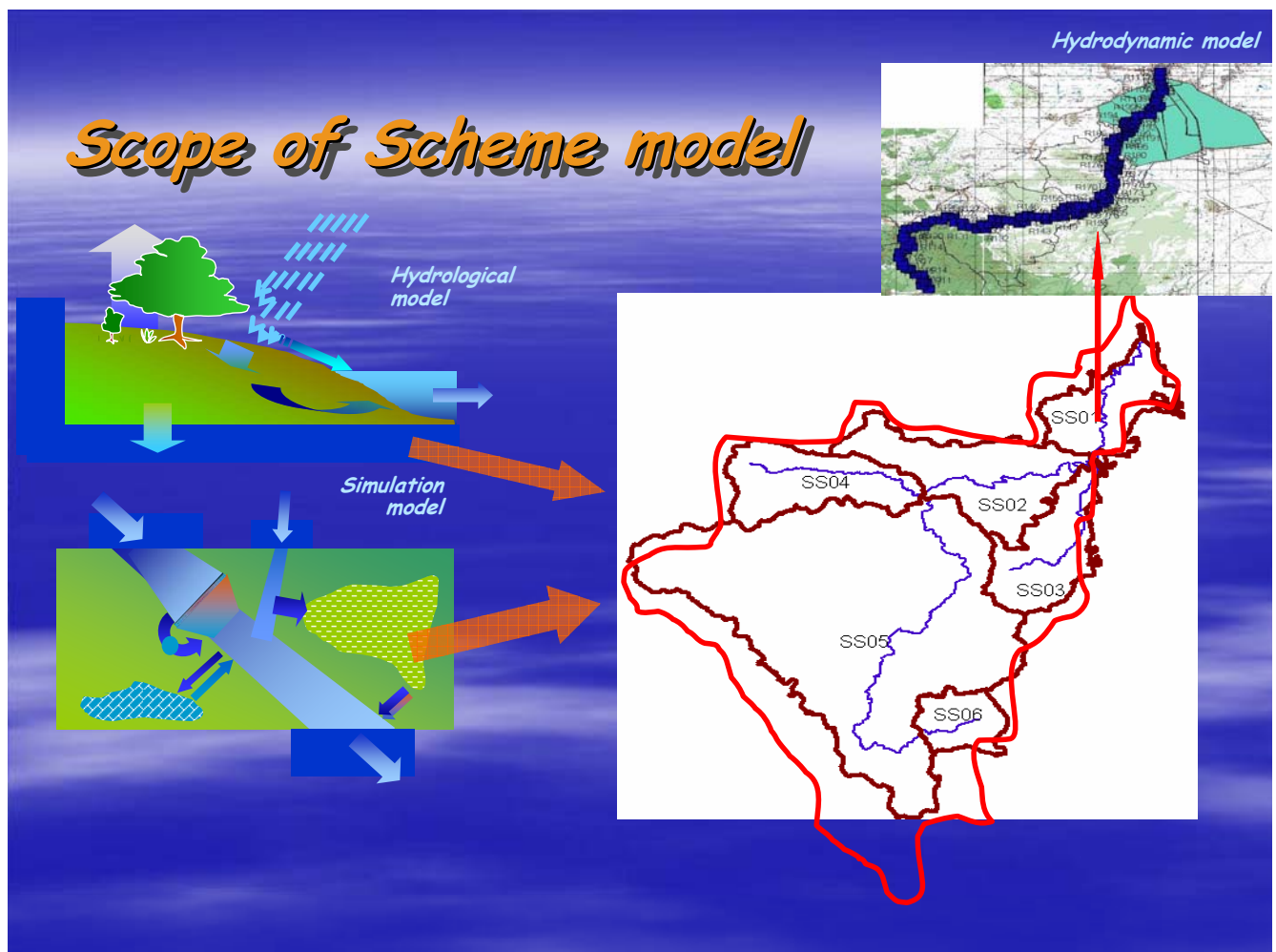
ISIS

Impact Analysis Tools

# scheme of Model



# Scope of Scheme model

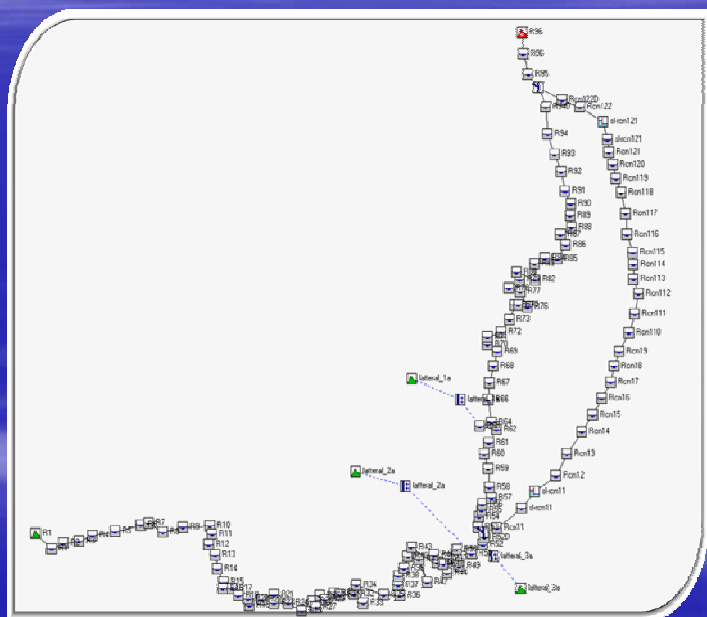
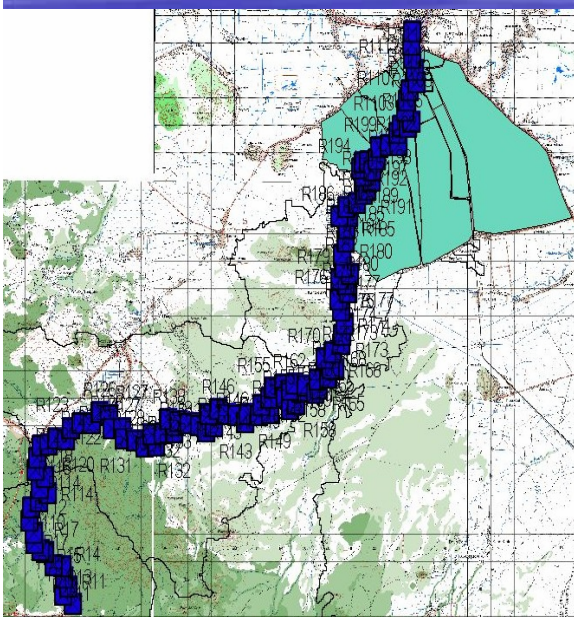


# Sungker River Sub-basin

Table 4.1:

Code	Sub-basin name	Surface area (km <sup>2</sup> )
SS01	Stung Sungker	230.7100
SS02	Stung Sungker	377.6650
SS03	Stung Sungker	250.4250
SS04	Stung Sungker	281.6600
SS05	Stung Sungker	1699.4851
SS06	Stung Sungker	121.0100

# Hydrodynamic Model Scheme





## SCENARIO SET UP (plan)

SCENARIO	Base line	Scenario 1: Climate Change	Scenario 2: Development	Scenario 3: Diversion Canal
Data use	1985-2000	1985-2000	1985-2000	1985-2000
Intervention	Existing	Using SWAT model to calculate the Climate Change ( Increased rain fall 20 %)	Add 2 new dams, Increase irrigated area up-to 80000 ha	Add new canal to diver flow for protecting flood in middle part and d/s
Models Application	SWAT, IQQM, iSIS	SWAT, ISIS	IQQM, ISIS	ISIS

*Thank You.*

