GEOSS Symposium on Integrated Observation for Sustainable Development in the Asia-Pacific Region At Dai-ichi Hotel Tokyo Seafort in Tokyo, Japan.11-12 January, 2007

Prepared by

LONG SARAVUTH / Hydrologist

Department of Hydrology and River Works / MOWRAM

E-mail : dhrw.cambodia@online.com.kh

E-mail : lsaravuth@online.com.kh

CONTENTS

I- Introduction Flooding Issues

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

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

I- Introduction Issues of draught

I- Introduction Water quality issues

point sources

- household sources
- municipal sources
- illegal mining and industrial activities

Non- point sources

- Using fertilizer and pesticides in agriculture sector

I- Introduction

- Water in the Mekong to be distributed by China 16%, Myanmar 2%, Thailand 18%, Lao PDR 35%, Vietnam 11% and Cambodia 18%.
- Cambodia has effected by flood from 28% - 33% whole country.
- Mekong Flood was divided 4 levels,refer to the water level at the Bassac-Chaktomuk station as :

  - Small Flood — Annual Maximum WL ≤ 9.00 m
  - Medium Flood — 9.00 m < Annual Maximum WL ≤ 10.00 m
  - Large Flood — 10.00 m < Annual Maximum WL ≤ 11.00 m
  - Largest Flood — Annual Maximum WL > 11.00 m

II- Flood Disaster & Its Hazards

- In 1996, 2000,2001 &2002 Flood overflowed into some cities of the province which have been located nearby Mekong River such as : Stung Treng, Kratie, Kg.Cham, Kandal especially Kompong Speu created many damages & hazards to effect the living-standard of people and infrastructure in the cities as :
  - Streets,Boulevards were damaged

II- Flood Disaster & Its Hazards Cont

- Big trees in the cities were broke down to impact the traffic.
- Drainage system ware broke to impact later outflow from the cities when water level raising down.
- To make serious pollution and be able diseases for people, animals.

II-Flood Disaster & Its Hazards Cont

- Refer to a report by NCDM, CRC, more than one million people suffered by serious flood in each year 2000, 2001 & 2002 and more than 2.4 million in 1996 by both flood and drought

II- Flood Disaster & Its Hazards Cont

* Impact by Flood

1. Negative

–Displacement of population

–Loss of food sources of crops, animals and so on

–Disease and death

–Damage to property and

2. Positive

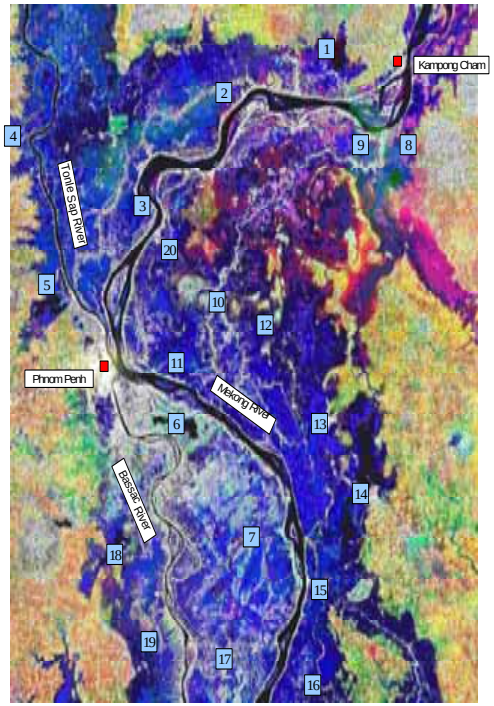
–Increased soil fertility

–Maintain fish stocks

–Support biodiversity of the natural

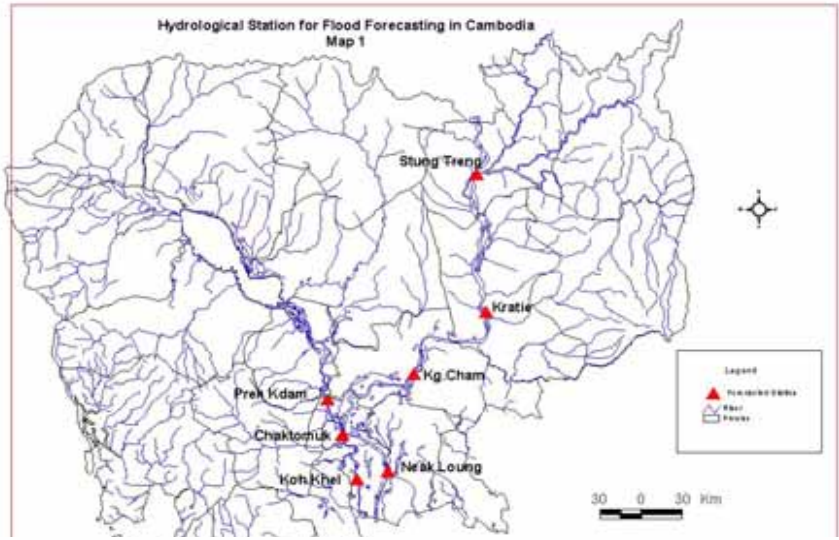
III-Flood Forecasting Networks

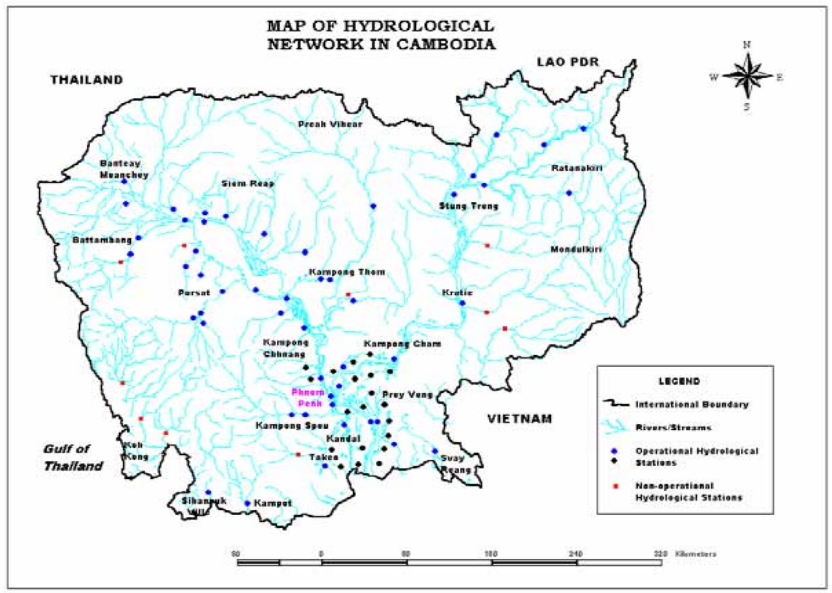
- 3 mainly rivers shemestic across in Cambodia (Mekong, Tonle Sap & Bassac)
- The general condition, floods are from August to September in the central plain and southern of the country.
- Flood was divided 2 kinds (Flash Flood & Mekong Flood)
- Flash flood may occurs in Southwest provinces of the country as Kompong Speu, Pusat, Kompot, Siem Reap, Koh Kong



III-Flood Forecasting Networks Cont

- 92 Hydrological stations
- 7 of 9 mainly stations to make the flood forecasting (4 stations along the Mekong, 2 along Bassac, 1 on Tonle Sap) & 2 others for info. Only.
- 40 village flood marks installed and make flood forecasting.

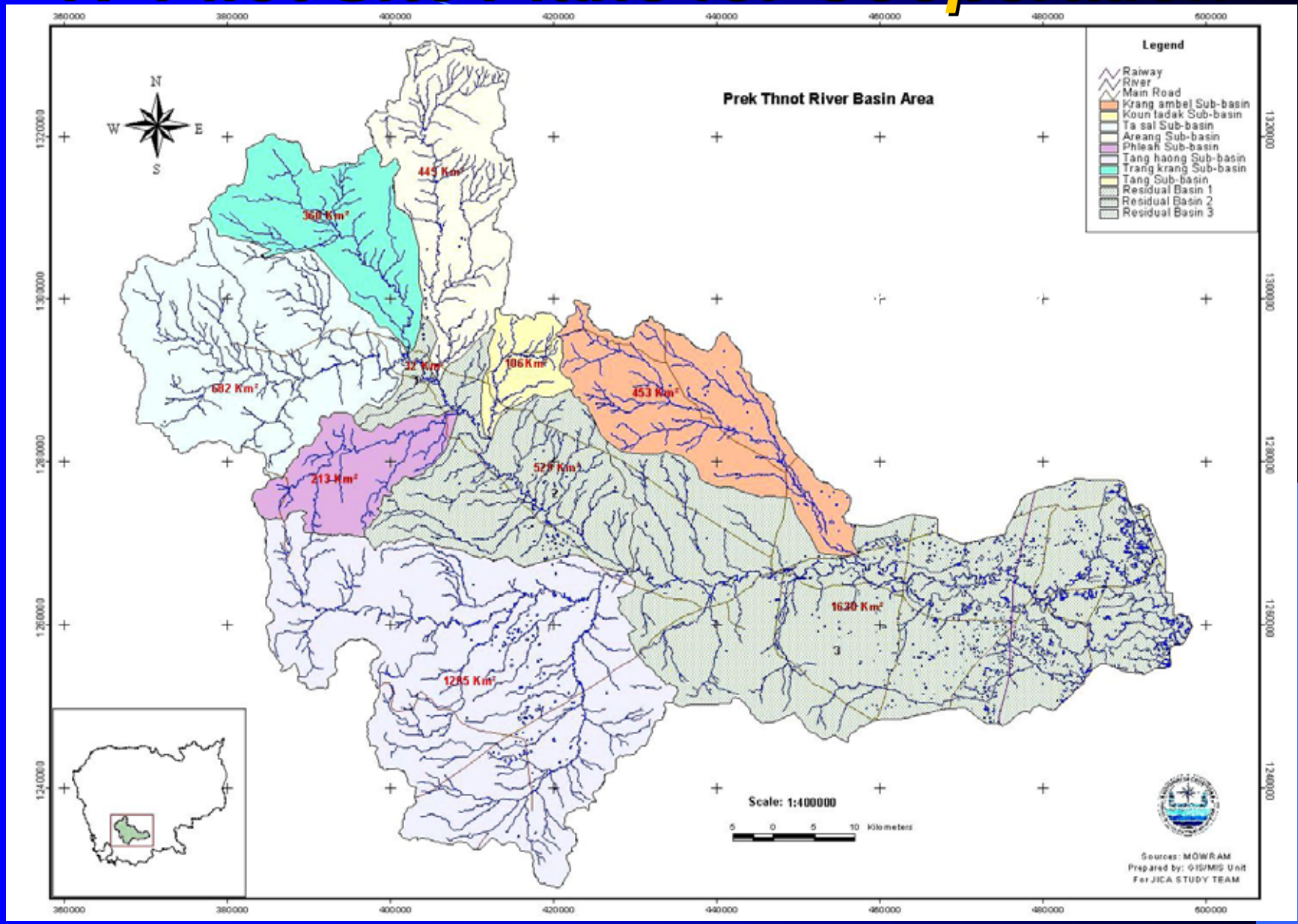




III-Flood Forecasting Networks Cont

- 40 Villages in the floodplain in 5 provinces was done for stung treng 9, Kratie 4, Kompong Cham 2, Kandal 14 and Prey Veng 11 stations.
- Flood forecasting implement only 4 months of a year
  - Use model CAMFFOREC
  - Daily forecast (bulletin)
  - Short forecast (3 day forecast)
  - Long forecasting (annual)
  - Flood stage point
  - Warning point

IV-Pilot Site Plane for Cooperation



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New Rainfall Gauging Stations

No.	Station Name	Equipment	District/Village	Location (UTM)	
				Northing	Easting
1	Kirirom	Automatic	Phnom Sruoch	1252931	396882
2	Wat Kdey Lvea	Automatic	Samrongtong	1268598	462114
3	Kong Pisey	Automatic	Kong Pisey	1247922	459627
4	Trapeang Chour	Automatic	Aoral	1306348	405995
5	Thpong	Automatic	Thpong	1299115	438559
6	Peam Khley	Automatic	Phnom Sruoch	1267566	430740
7	Phum Chum	Automatic	Aoral	1294020	383194
8	Roleang Chrey	Automatic	Samrongtong	1264829	439962
9	Prey Kaniech	Automatic	Phnom Sruoch	1262000	409200
10	O Kon Trom	Automatic	Phnom Sruoch	1238125	417515

New Water Level Gauging Stations

No.	Station Name	Equipment	District/Village	Location (UTM)	
				Northing	Easting
1	Peam Khley Bridge	Logger & S.G.	Phnom Sruoch	1266500	430871
2	Thnuos Luong	Logger & S.G.	Chbr Mon	1266357	446561
3	Krang Chek	Logger & S.G.	Phnom Sruoch	1261082	402458
4	Cheneang Kpuos	Logger & S.G.	Phnom Sruoch	1265906	427244
5	Sangkea Tasal	Logger & S.G.	Aoral	1290500	405000
6	Trapeang Kchon	Logger & S.G.	Samrongtong	1267436	458215
7	Roleang Chrey	S.G.	Samrongtong	1265095	440236
8	Prey Mean	S.G.	Aoral	1285872	406818

S.G. : Staff Gauge

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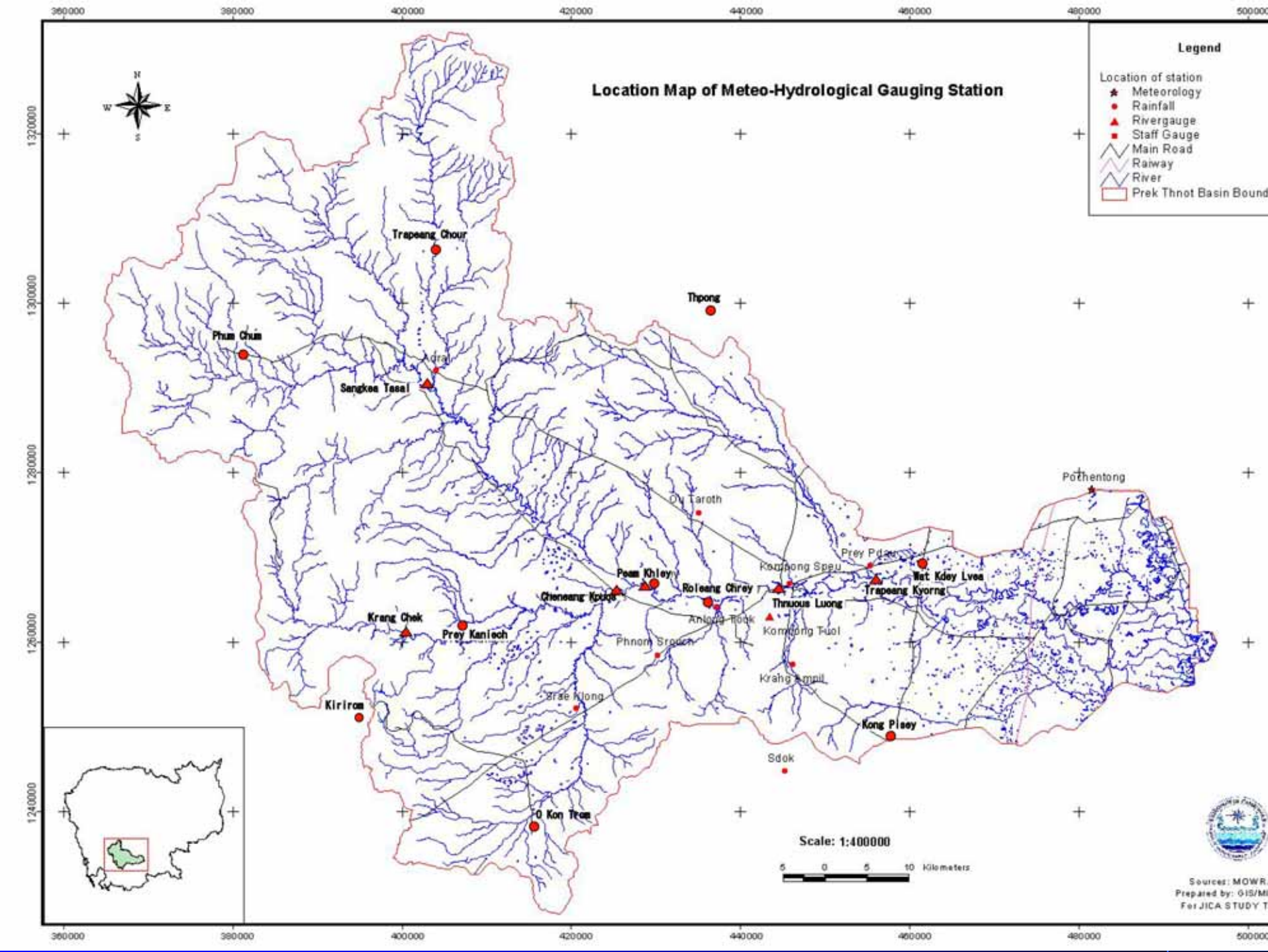
Location Map of Meteo-Hydrological Gauging Station
Legend
Location of station
Meteorology
Rainfall
Rivergauge
Staff Gauge
Main Road
Railway
River
Prek Thnot Basin Bound
Trapeang Chour
Thpong
Phum Chum
Adral
Sangkea Tasal
Oy Taroth
Pochentong
Prey Pdau
Kompong Speu
Peam Khley
Roleang Chrey
Chieneang Kpuos
Thnuous Luong
Nat Kdey Lvea
Trapeang Kyorng
Krang Chek
Prey Kanlech
Anlong Rok
Kompong Tuol
Phnom Srouch
Krahg Ampil
Srae Klong
Kirirom
Kong Pisey
Sdok
O Kon Treas
Scale: 1:400000
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Strategy of
Flood Forecasting and Warning
in the Prek Thnot River Basin

Option 1: Water Level Correlation Method

Option 2: Water Level and Rainfall Correlation Method

Option 3: Runoff and Inundation Model Update

V- Conclussion

- Cambodia occurred seriously flood in the last 10 years.
- Capacity Development on sustainable data collection and observation need to be improve (Install Rada, Tele-metry networks) .
- Training and skill development on flood forecasting and warning.
- Technical assistance and capacities building for GEOSS and subjects involved Hydro-Meteorology areas are need.
- The capacity to deal with GEOSS still limited in terms of using the Height technology, knowledge, experience, fund and resources for the activities.
- The selection of pilot site for Cooperation is difficult due to inadequate of related data and information.


Thank You For Your Kind Attendtion