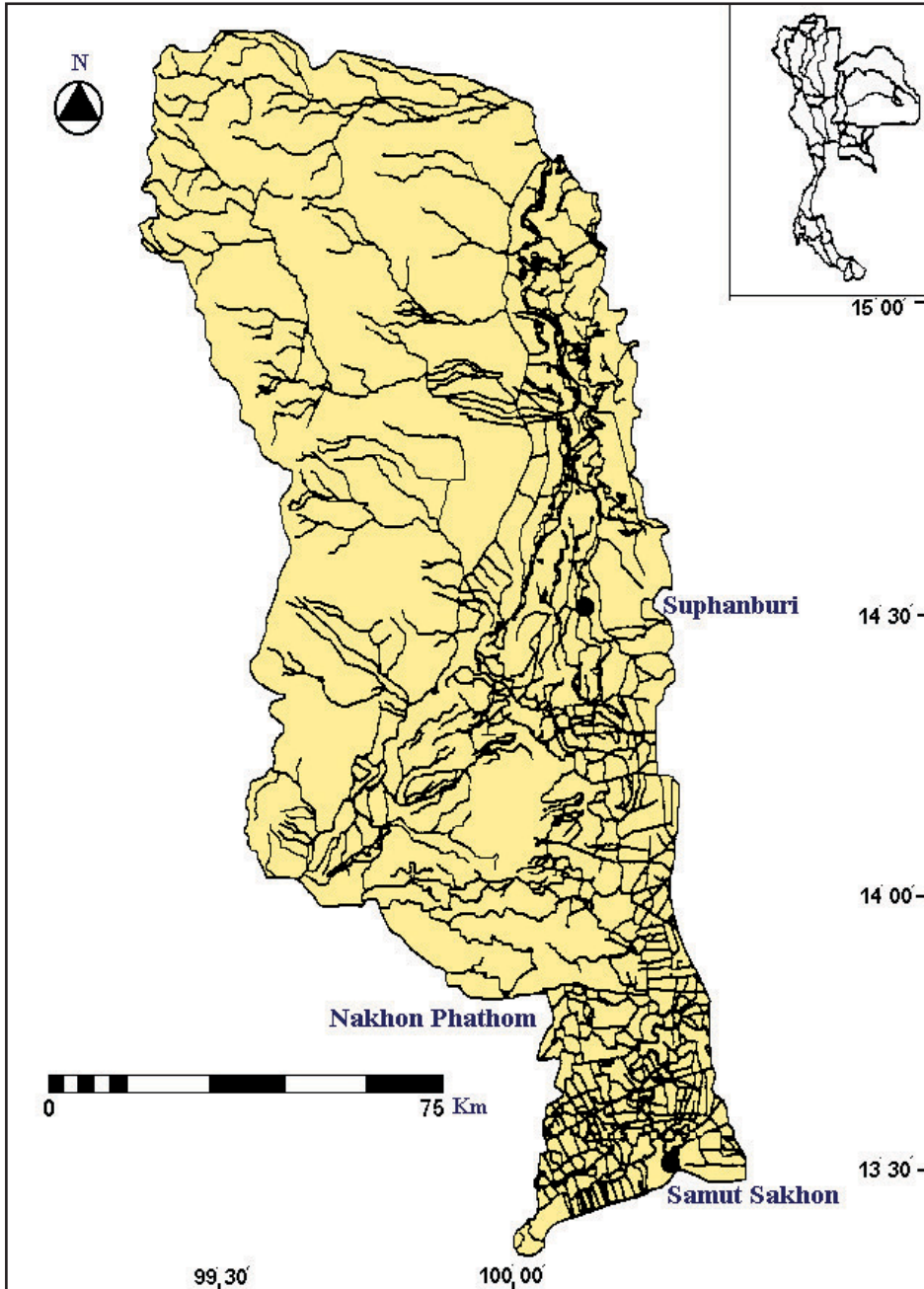


# Tha Chin River

## Map of River



## Table of Basic Data

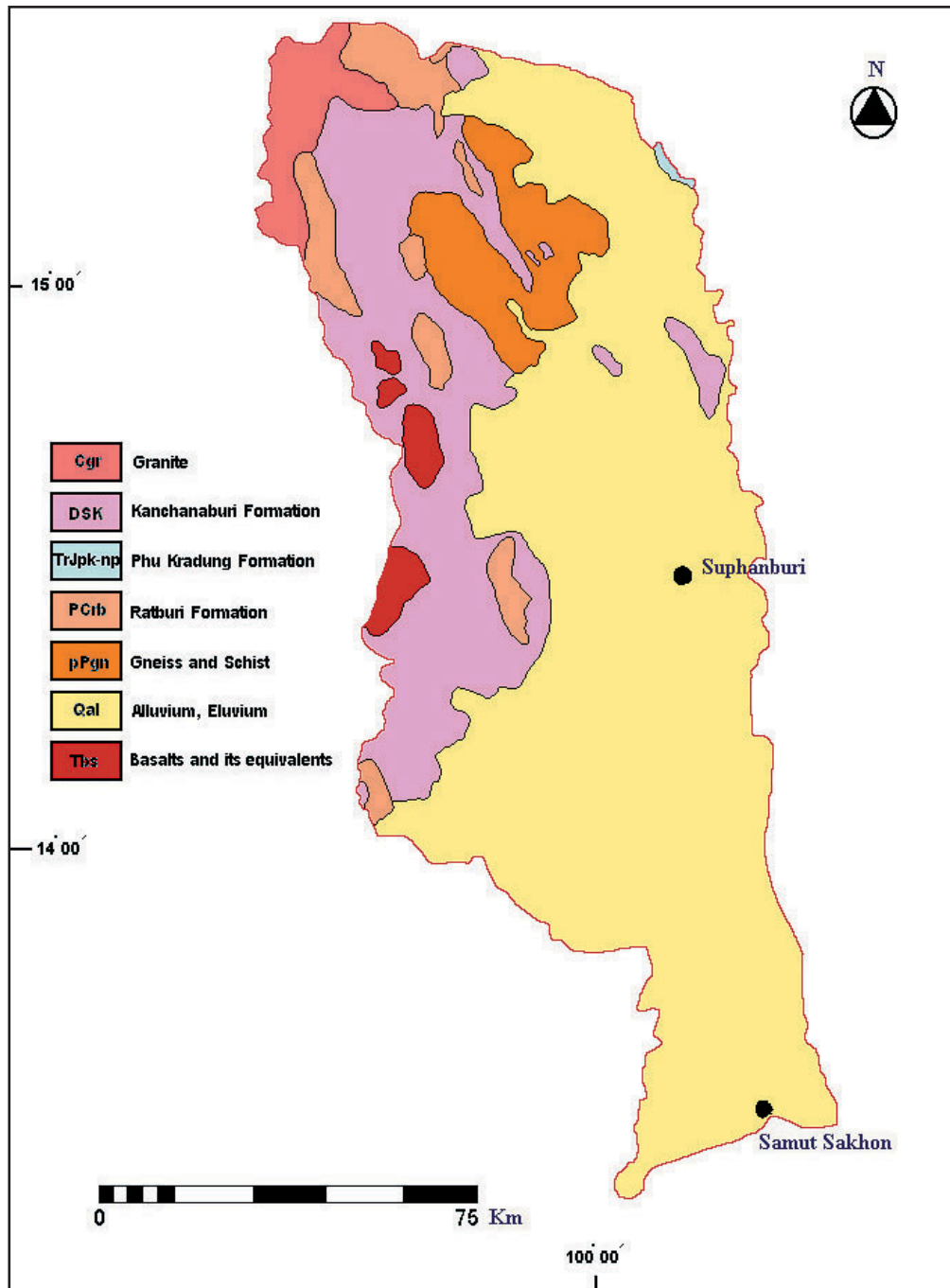
<b>Name:</b> Tha Chin River		<b>Serial No. :</b> Thailand-13
<b>Location:</b> Central part of Thailand	N 17° 05' 00" ~ 19° 30' 00"	E 98° 54' 00" ~ 99° 58' 00"
<b>Area:</b> 14,199 km <sup>2</sup>	<b>Length of Main stream:</b> 439 km	
<b>Origin:</b> Doi Luang	<b>Highest point:</b> 1,390 m	
<b>Outlet:</b> Gulf of Thailand	<b>Lowest point:</b> 0 m (Muang District, Samut Prakan Province)	
<b>Main geological features:</b> Granite, Kanchanaburi Formation, Ratburi Formation, Phu Kradung Foemation, Alluvium, Eluvium, Gneiss and Schist, Basalts and its equivalents		
<b>Main Tributaries:</b> Huai Kra Sieo (1,788 km <sup>2</sup> ), Tha Chin Plain (12,411 km <sup>2</sup> )		
<b>Main Lake:</b> None		
<b>Main Reservoir:</b> Kra Sieo Dam (201 mmc, 1977)		
<b>Mean annual Precipitation:</b> 1,390.6 mm. (1975-2001) At station 03130201 Ban Rai District, U-thai Thani Province		
<b>Mean Annual Runoff:</b> 3.70 m <sup>3</sup> /s (1984-1998) at station 01130206 Ban Thap Khrai, Ban Rai District, U-thai Thani Province		
<b>Population:</b> 1,817,708 (1998)	<b>Main Cities:</b> Suphanburi, Chainat, Nakhon Phathom, Samutsakhon, Nakhon Sawan and U-thai Thani Province	
<b>Land use:</b> Forest 7.5 %, Agriculture & urban area 90.8 %, Water resource 1.7 %		

### 1. General Description

Tha Chin, a branch of the Chao Phraya River, begins at Makham-Thao subdistrict, Wat Singh District of Chainat Province. It flows through Suphanburi, Nakhonpathom and drains to the Gulf of Thailand at Samuthsakorn Province. The lower river basin is connected to the Mae Klong River basin. Major tributaries of this river are Huai Krasieo and Supanburi rivers.

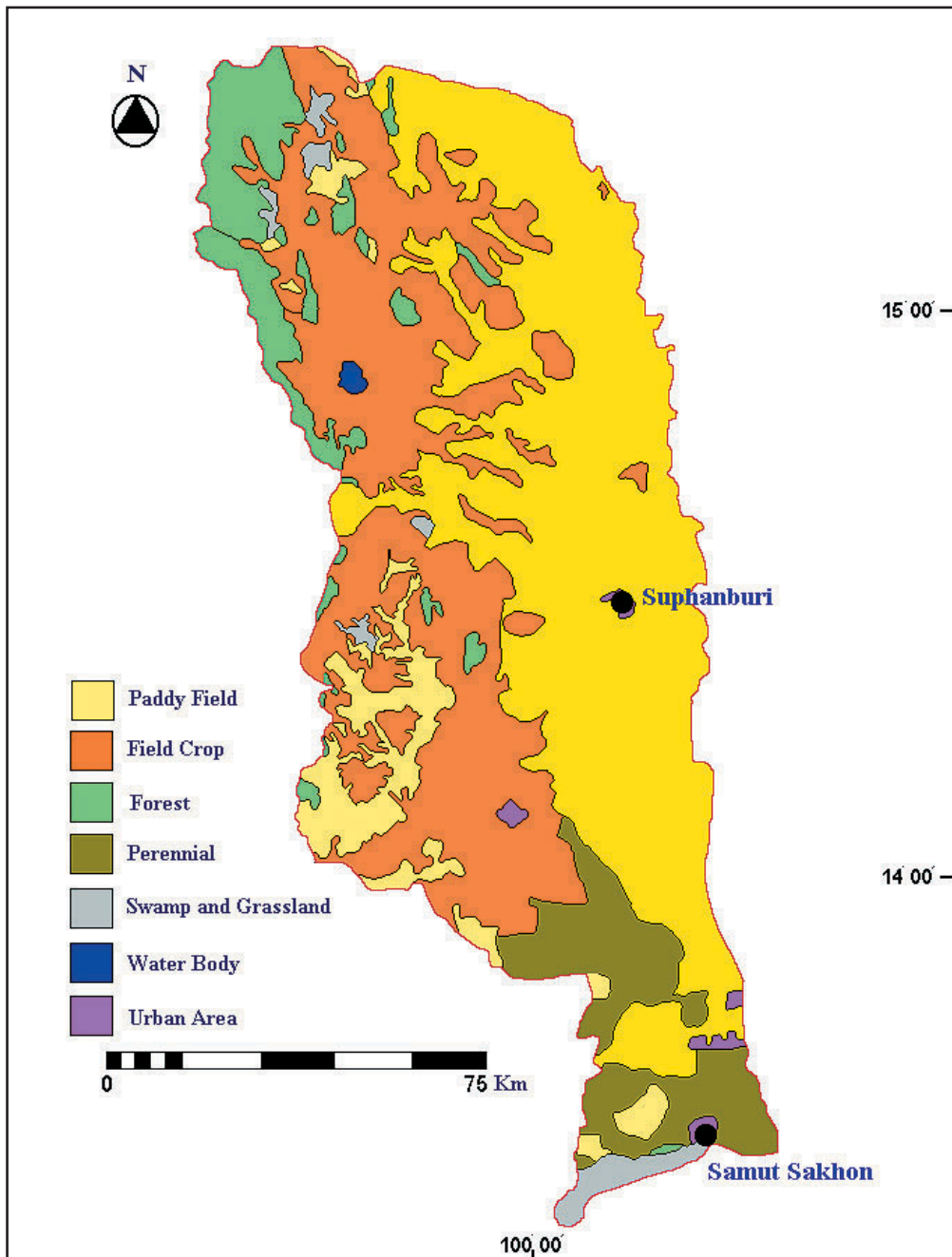
## 2. Geographical Map

### 2.1 Geological Map



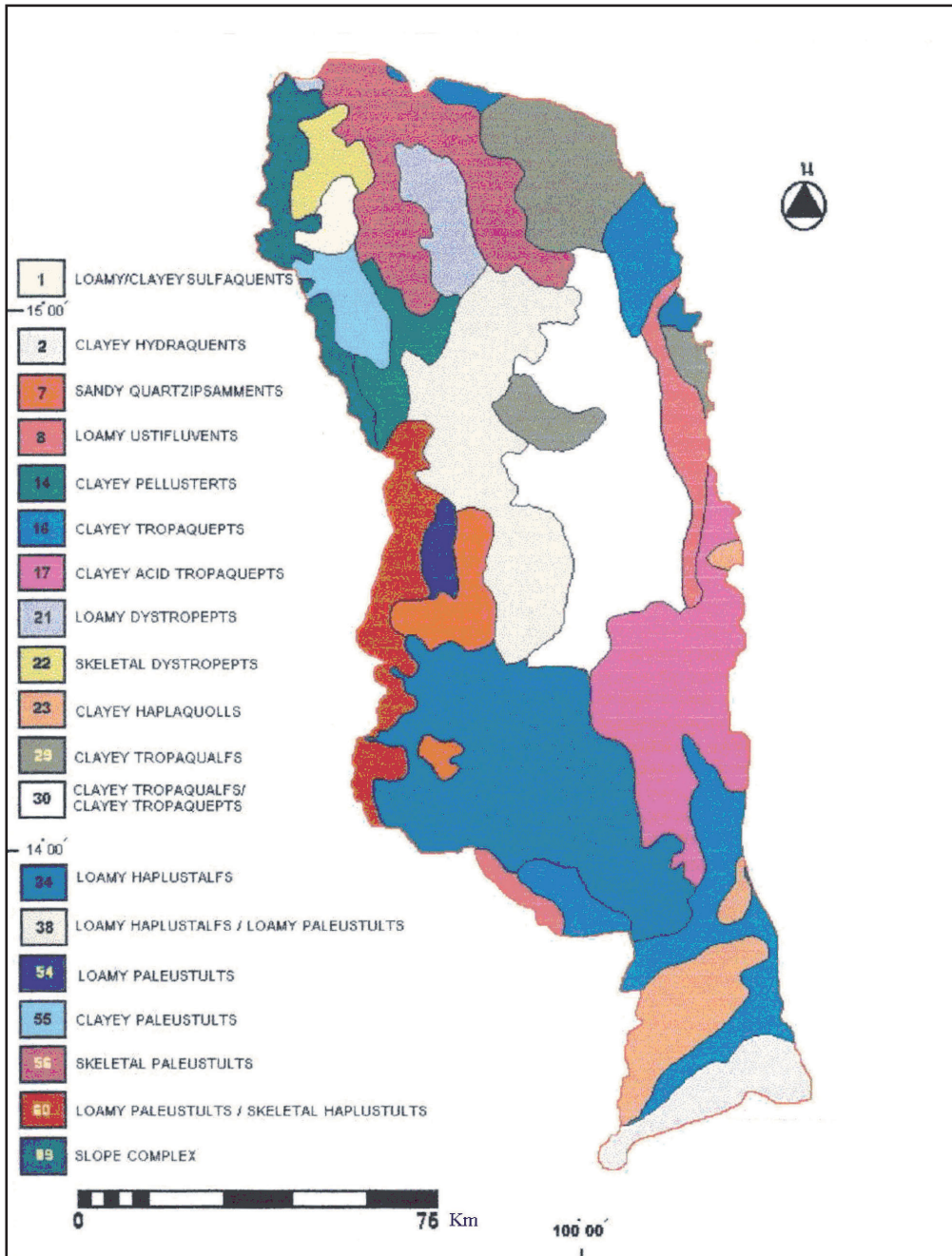
Source: Geological Map of Thailand  
 : Jumchet C. Javanaphet, 1969, Department of Mineral Resources.

2.2 Land-use Map



Source: Landuse map of Central of Thailand, 1998  
 Landuse Planning Division  
 Department of Land Development

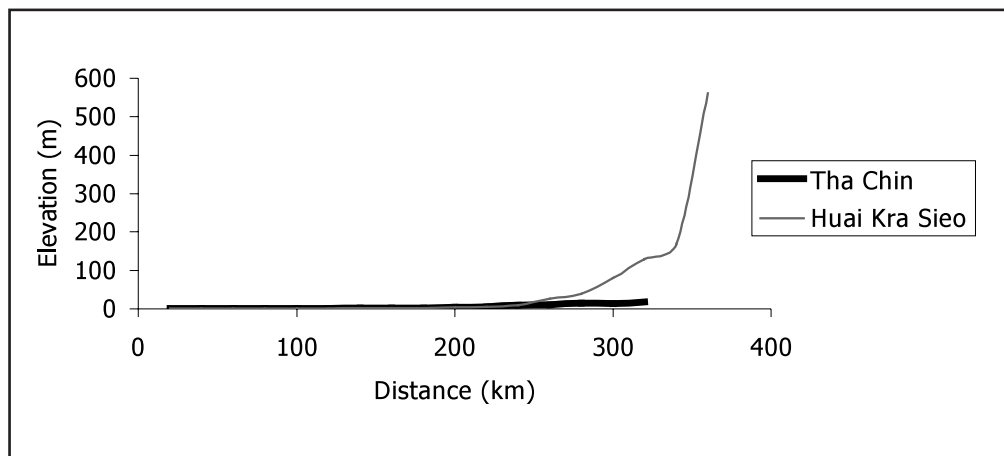
2.3 Soil Map



2.4 Characteristics of the River and the Main Tributaries

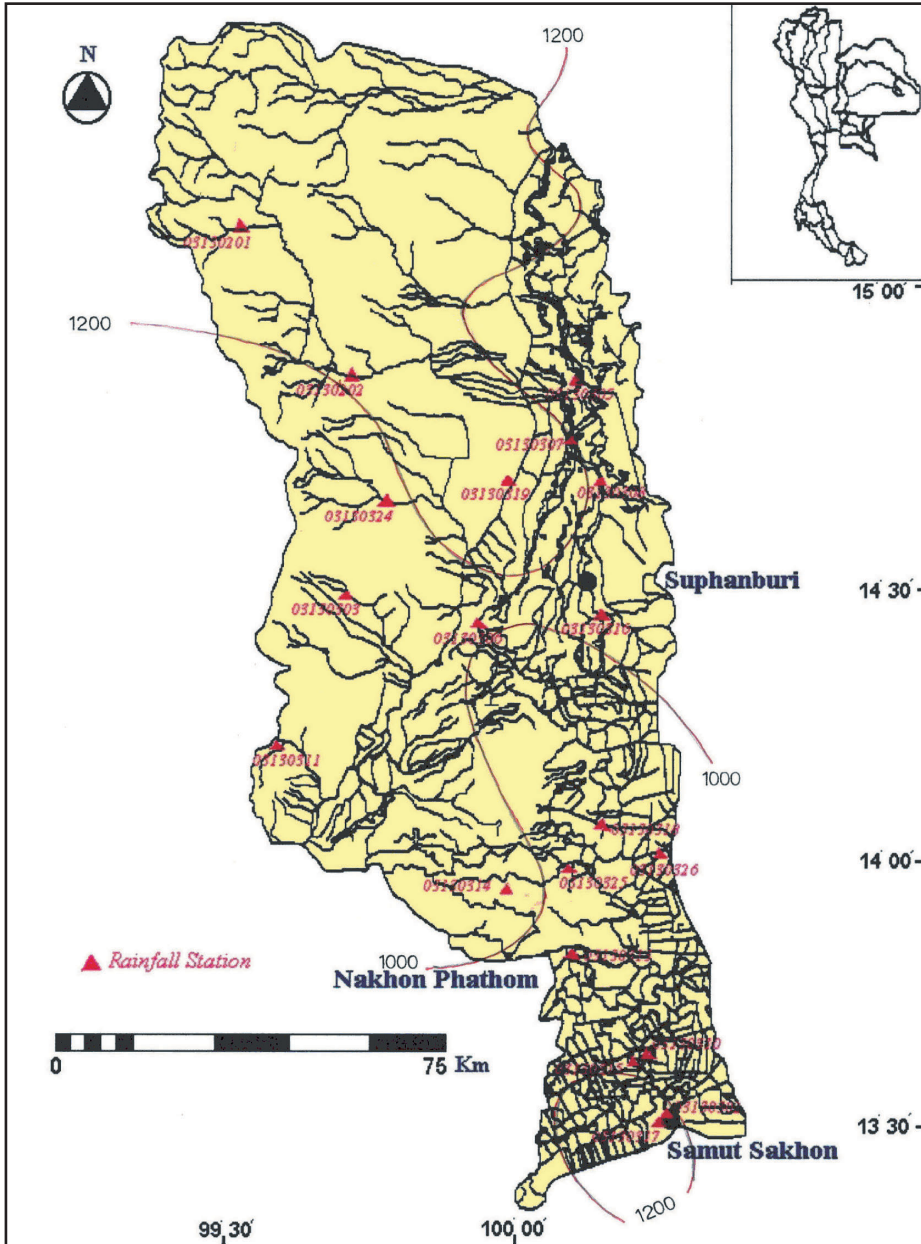
No.	Name of River	Length (km) Catchment area (km <sup>2</sup> )	Highest Peak (m) Lowest Peak (m)	Cities Population (1998)	Land-Use [%] (1994)
1	Tha Chin River	362 27,363	1,390	Suphanburi, Chainat, Nakhon Phathom, Samutsakhon, Kanchanaburi and U- thai Thani Province	Forest (9.2%), Agriculture & urban area (90.8 %), Water resource (1.7 %)
2	Huai Kra Sieo	132 1,788	1,390	Sam Chuk, Dermbang Nangbuad District, Suphanburi Province Ban Rai District, U-thai Thani Province	
3	Tha Chin Plain	307 25,575	597	Muang, Krathumban District, Samutsakhon Province Samphan, Nakhon Chaisri, Bang Lane, Putamonthon, Kamphaengsaen District, Nakhon Phathom Province Sawankaburi District, Chainat Province Sripachan, Muang, Songpinong, U-thong, Bangprama, Don-j-di, Samchuk District, Suphanburi Province Thamaka, Phanom tuan, Lao-Khuan District, Kanchanaburi Province	

2.5 Longitudinal Profiles



### 3. Climatological Information

#### 3.1 Annual Isohyetal Map and Observation Stations



### 3.2 List of Meteorological Observation Stations

Station No.	Station Name	Location	Observation period	Mean annual Precipitation (mm)	Observation items <sup>1)</sup>
03130201	Ban Rai	N 15° 04' 49" E 99° 31' 34"	1975 - 2001	1,390.6	P (S)
03130202	Dan Chang	N 14° 49' 05" E 99° 41' 55"	1977 - 2001	981.4	P (S)
03130301	Muang Suphanburi	N 14° 28' 00" E 100° 08' 00"	1951 - 2002	1,130.7	P (S)
03130302	Wat Sing	N 15° 15' 22" E 100° 02' 51"	1975 - 2002	1,018.8	P (S)
03130303	Han Kha	N 14° 58' 50" E 100° 01' 03"	1975 - 2001	819.7	P (S)
03130304	Song Pi Nong	N 14° 13' 16" E 100° 01' 27"	1975 - 2002	1,039.1	P (S)
03130305	Derm Bang Nang Buad	N 14° 50' 34" E 100° 05' 59"	1975 - 2002	952.8	P (S)
03130306	U-thong	N 14° 22' 25" E 99° 53' 40"	1975 - 2002	850.9	P (S)
03130307	Sam Chuk	N 14° 45' 14" E 100° 05' 49"	1975 - 2002	998.2	P (S)
03130308	Sri Prachan	N 14° 37' 02" E 100° 08' 51"	1975 - 2001	773.7	P (S)
03130309	Bang Pueng	N 14° 19' 00" E 99° 55' 00"	1952 - 1996	1,129.1	P (S)
03130310	Kra Tum Ban	N 13° 39' 00" E 100° 16' 00"	1975 - 2002	1,136.6	P (S)
03130311	Phanom Tuan	N 14° 07' 39" E 99° 42' 07"	1975 - 2002	928.2	P (S)
03130313	Nakhon Chaisri	N 13° 47' 54" E 100° 11' 23"	1975 - 2002	1,058.7	P (S)
03130314	Kam Phaeng Saen	N 13° 59' 01" E 99° 59' 42"	1975 - 2002	935.9	P (S)
03130315	Sam Phan	N 13° 43' 22" E 100° 13' 12"	1975 - 2002	1,101.4	P (S)
03130316	Bang Lane	N 14° 01' 25" E 100° 10' 34"	1957 - 2002	1,061.6	P (S)
03130317	Muang Samutsakhon	N 13° 31' 00" E 100° 16' 00"	1957 - 2000	1,067.9	P (S)
03130318	Bang pama	N 14° 24' 01" E 100° 09' 29"	1952 - 1996	946.1	P (S)
03130319	Don-j-di	N 14° 38' 00" E 100° 01' 27"	1966 - 1996	1,011.7	P (S)
03130324	Lao Kuan	N 14° 35' 25" E 99° 46' 25"	1976 - 2000	880.8	P (S)
03130325	Don Tum	N 13° 57' 36" E 100° 05' 04"	1977 - 2002	946.1	P (S)
03130326	Sand Noi	N 13° 58' 31" E 100° 19' 05"	1978 - 2002	1,032.4	P (S)

1) P (S) : Precipitation from standard rain gauge



### 3.3 Monthly Climatic Data

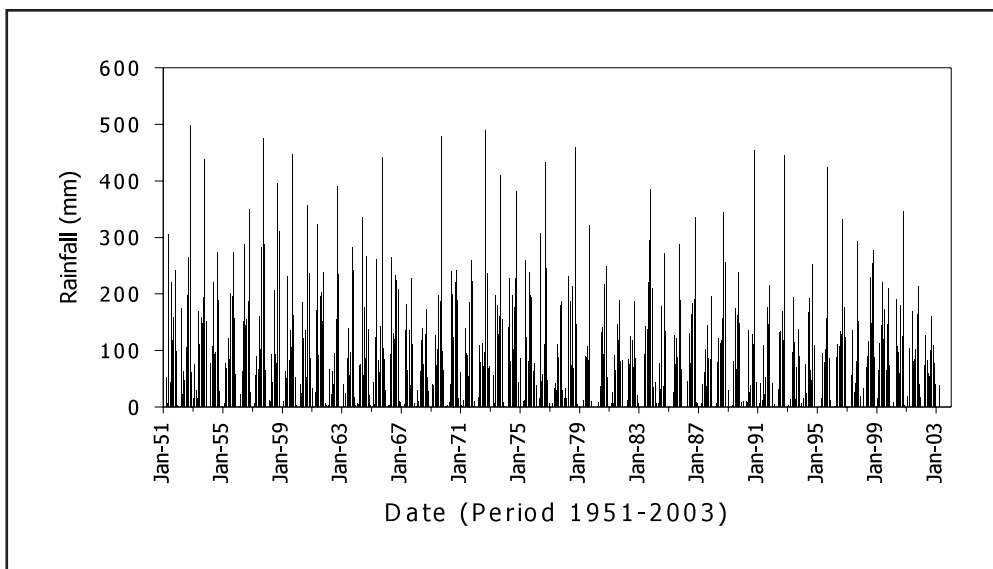
Station: 03130301 Muang district, Suphan Buri province

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Monthly	Annual	Period of the mean
1	25.6	27.4	29.2	30.6	30.0	29.2	28.7	28.4	28.1	27.7	26.4	24.8	28.0	-	1966 ~ 1996
2	5.2	9.3	30.1	63.4	141.7	105.3	114.6	135.2	264.6	209.9	42.8	8.6	94.2	1,130.7	1951 ~ 2002
3	129.4	135.7	179.7	197.1	187.5	167.8	161.4	153.1	135.5	129.9	127.3	129.0	152.8	1,833.4	1963 ~ 2002

1: Temperature [°C]  
 2: Precipitation [mm]  
 3: Evaporation [mm]

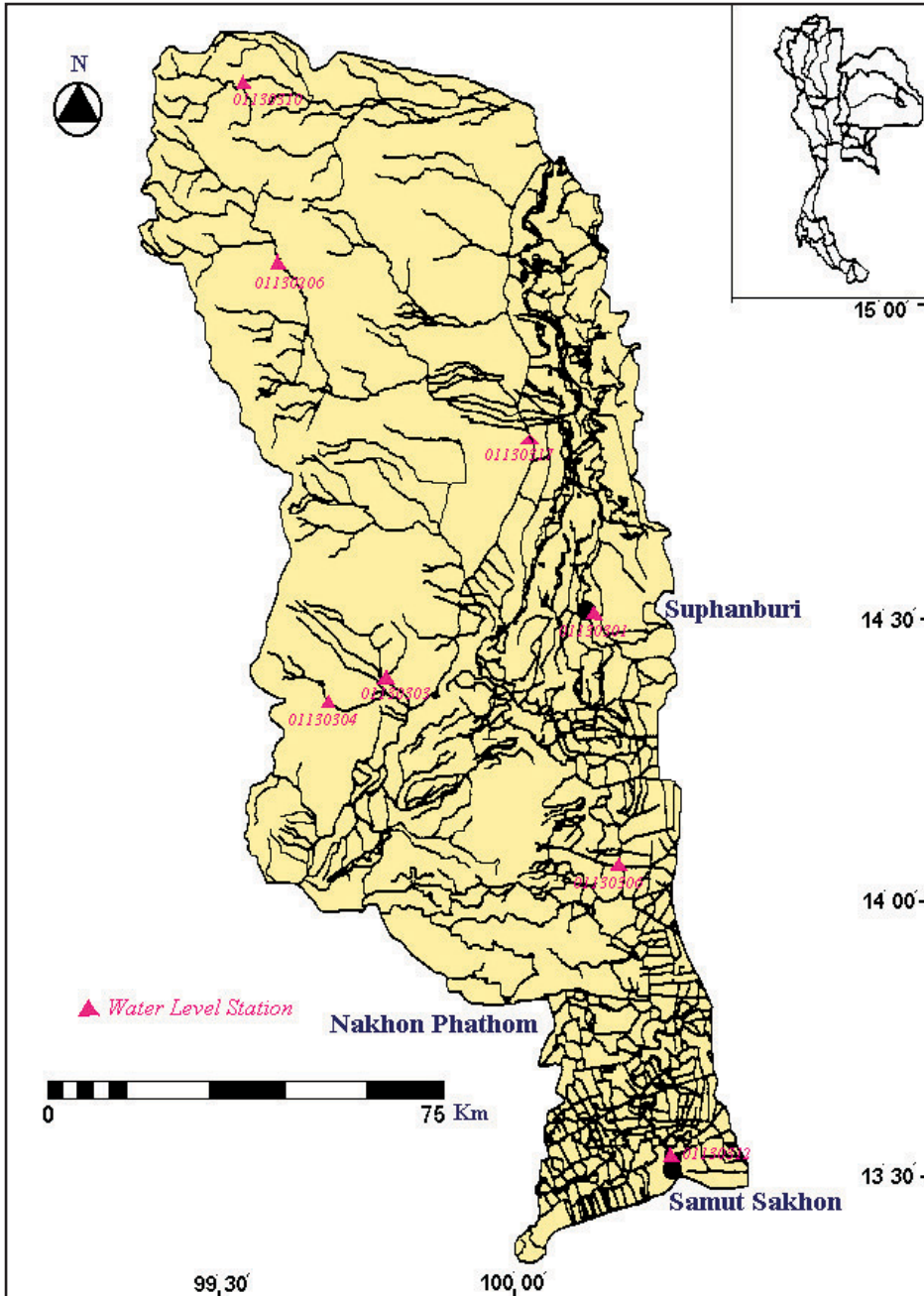
### 3.4 Long-term Variation of Monthly Precipitation Series

Station: 03130301 Muang District, Suphanburi Province



## 4. Hydrological Information

### 4.1 Map of Streamflow Observation Stations



### 4.2 List of Hydrological Observing Stations

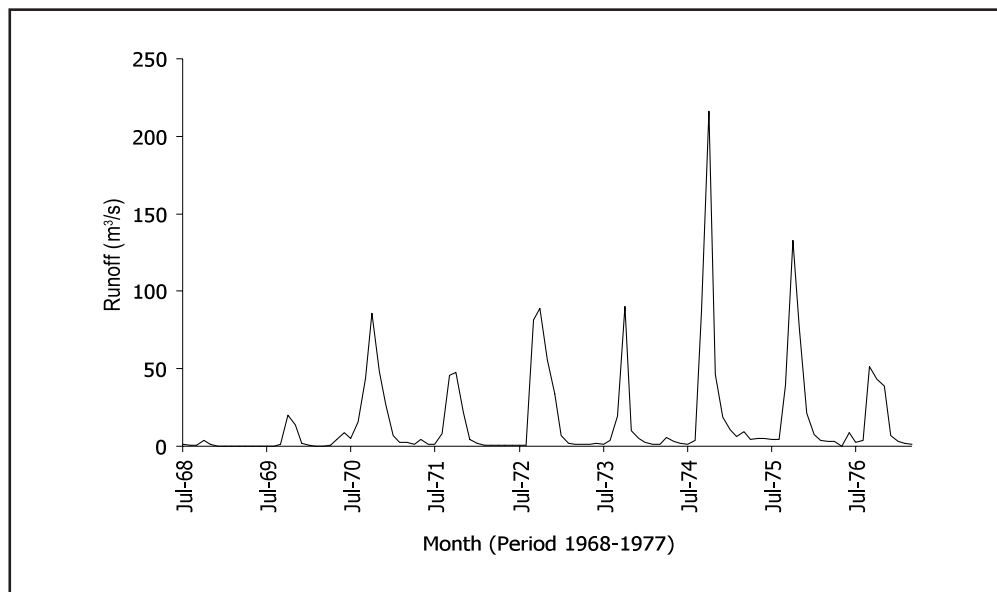
No.	Station	Location	Catchment area (A) [km <sup>2</sup> ]	Observation period	Observation items <sup>1)</sup>
01130201	Derm Bang Nang Buad	N 14° 51' 44" E 99° 39' 10"	1,065	1963 - 1968	Q (H1)
01130203	Dan Chang	N 14° 49' 03" E 99° 41' 51"	1,395	1968 - 1976	Q (H1)
01130206	Ban Rai	N 15° 03' 06" E 99° 35' 18"	607	1984 - 1998	Q (H1)

No.	$\bar{Q}$ <sup>2)</sup> [m <sup>3</sup> /s]	Qmax <sup>3)</sup> [m <sup>3</sup> /s]	$\bar{Q}$ max <sup>4)</sup> [m <sup>3</sup> /s]	$\bar{Q}$ min <sup>5)</sup> [m <sup>3</sup> /s]	$\bar{Q}/A$ [m <sup>3</sup> /s/100km <sup>2</sup> ]	Qmax/A [m <sup>3</sup> /s/100km <sup>2</sup> ]	Period
01130206	3.70	587	135	0.05	0.61	96.71	1984 ~ 1998

- 1) H1 : Water level at recording chart
- 2)  $\bar{Q}$  : Mean annual discharge
- 3) Qmax : Maximum discharge
- 4)  $\bar{Q}$ max : Mean annual maximum discharge
- 5)  $\bar{Q}$ min : Mean annual minimum discharge

### 4.3 Long-term Variation of Monthly Discharge Series

Station: 01130203 at Ban Dan Chang, Suphan Buri Province



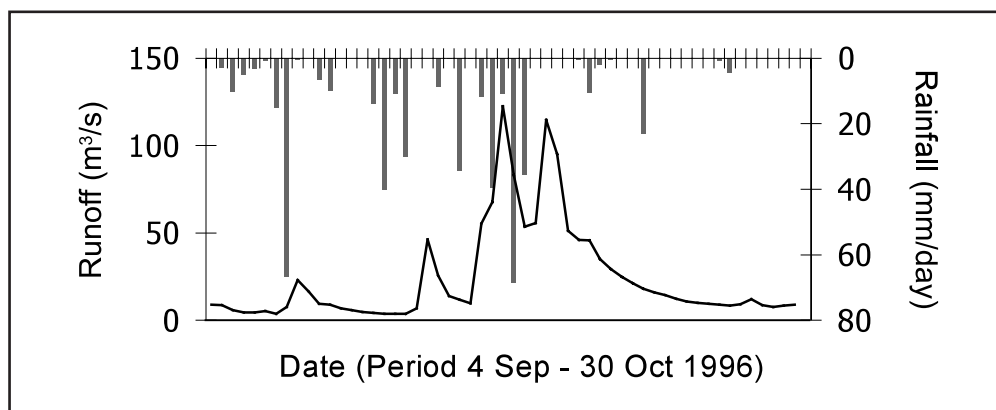
#### 4.4 Annual Maximum and Minimum Discharge

Station: 01110202 Kha Woralakburi District, Kham Phaeng Phet Province (938 km<sup>2</sup>)

Year	Maximum		Minimum		Year	Maximum		Minimum	
	Date	m <sup>3</sup> /s	Date	m <sup>3</sup> /s		Date	m <sup>3</sup> /s	Date	m <sup>3</sup> /s
1984	10.20	29.2	3.12	0.06	1991	10.24	57.7	3.01	0.12
1985	10.23	53.1	3.28	0.00	1992	10.17	238.0	4.07	0.00
1986	5.10	117.0	4.05	0.05	1993	9.30	984.0	3.03	0.06
1987	10.06	37.1	7.13	0.00	1994	10.02	41.5	3.21	0.00
1988	9.20	402.0	4.01	0.10	1995	12.15	128.0	7.04	0.16
1989	10.20	45.6	3.27	0.07	1996	10.01	587.0	3.20	0.00
1990	10.09	83.6	3.25	0.10	1997	10.07	15.6	3.24	0.00

#### 4.5 Hyetographs and Hydrographs of Major Floods

Station: 03130206 Ban Thap Krai, Amphoe Ban Rai, Uthaithani Province



#### 4.6 Major Peak Discharge Experiences

No.	Drainage Area (km <sup>2</sup> )	Discharge		Date	Period of year
		m <sup>3</sup> /s	m <sup>3</sup> /s/km <sup>2</sup>		
01130206	607	587	0.967	1/10/96	1984 - 1997

#### 4.7 Water Quality

Point	Year	PH	DO (mg/l)	BOD (mg/l)	Coliform (MPN/100 ml)
Upper Tha Chin	1997	-	5.1	1.0	7,000
Middle Tha Chin	1997	-	2.0	2.0	2,700 - 20,000
Lower Tha Chin	1997	-	1.0	2.1	20,000

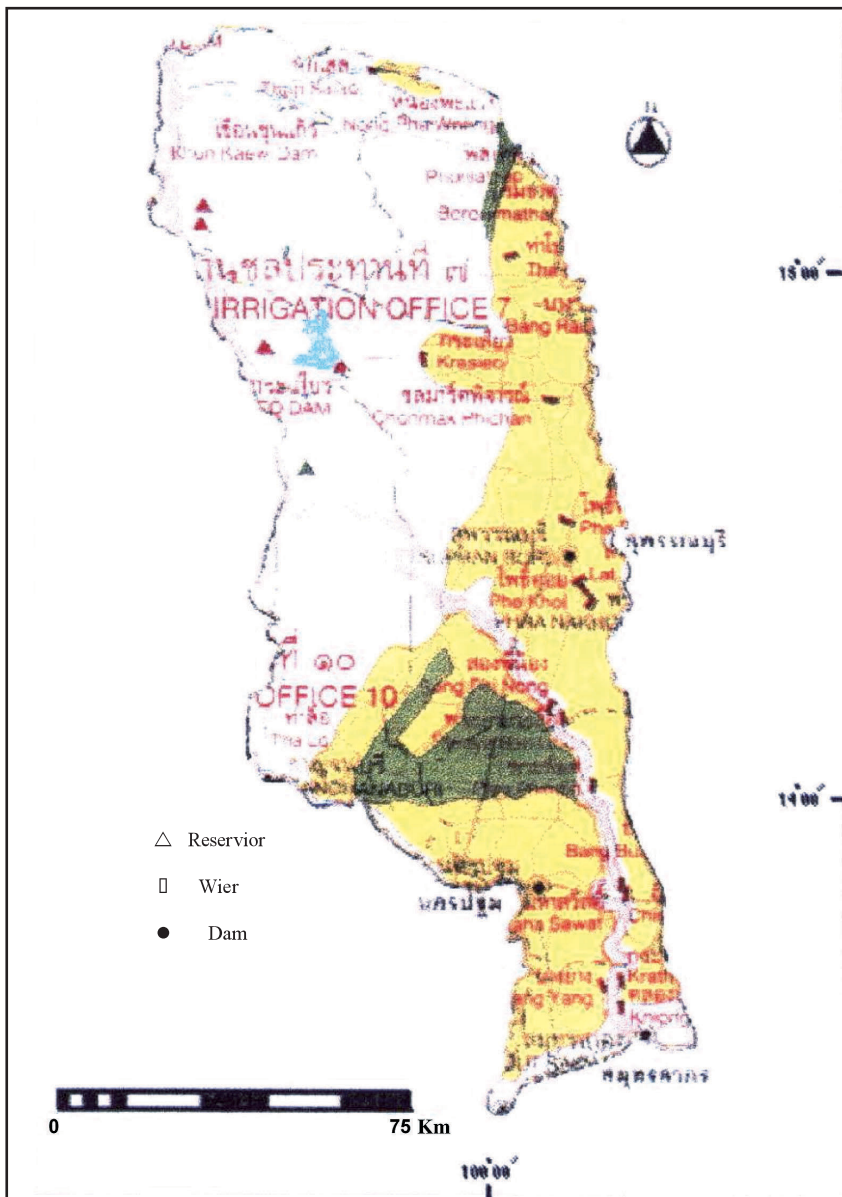
## 5. Water Resources

### 5.1 General Description

The Tha Chin River basin is divided into 3 sub-basins. Most of the areas in the river basin are field crop and paddy field. The water resource is utilized mainly for paddy irrigation.

Huai Krasieo Dam is the only existing impounding reservoir in the basin and has the gross and effective capacities of  $240 \times 10^6 \text{ m}^3$  and  $201 \times 10^6 \text{ m}^3$  respectively.

### 5.2 Map of Water Resources Systems



### 5.3 List of Major Reservoirs

Name of River	Name of Reservoir	Catchment area [km <sup>2</sup> ]	Gross Capacity [10 <sup>6</sup> m <sup>3</sup> ]	Effective Capacity [10 <sup>6</sup> m <sup>3</sup> ]	Purpose <sup>1)</sup>	Year of completion
Huai Krasieo	Huai Krasieo Dam	1,200	240	201	A, F, I, W	1977

1) A: agriculture, F: Flood control, I: Industry, P: Hydropower, W: Municipal water supply

## 6. Socio-cultural characteristics

The Tha Chin River basin covers most parts of Supanburi Province. Cultures of the basin inhabitants are in common with those who live in the central plain of the country having Songkhran water festival, Loy Kratong, general merit making festival, Don Chadi Fair as annual festive activities. These activities attract tourists from all over the country as well as foreign visitors to visit all year round.

## 7. References

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- Meteorological Department, (2001): Climatological Data of Thailand. 1951-2001.
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- Department of Land Development. Soil of the Kingdom of Thailand, (1972): Explanatory Text of the General Soil Map, Soil Survey Division.
- Electricity Generating Authority of Thailand, (1992): Surface runoff and specific yield of river basin in Thailand, Survey and Ecology Department, Meteorology and Hydrology Division.