


JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

ROYAL IRRIGATION DEPARTMENT
MINISTRY OF AGRICULTURE AND COOPERATIVES
KINGDOM OF THAILAND

**THE STUDY
ON THE KOK-ING-NAN WATER DIVERSION PROJECT
IN THE KINGDOM OF THAILAND**

FINAL DATABASE MAPS

(Feasibility Study)

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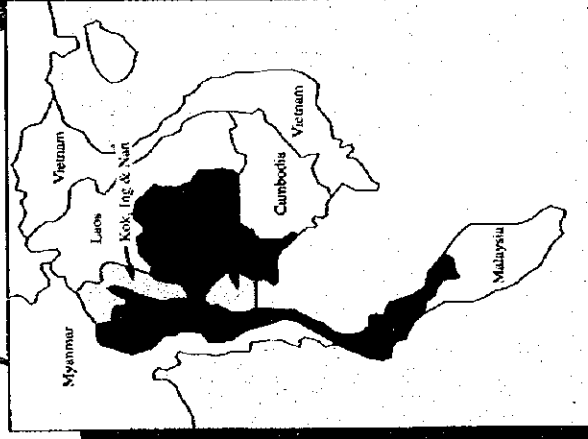
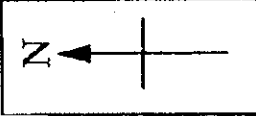
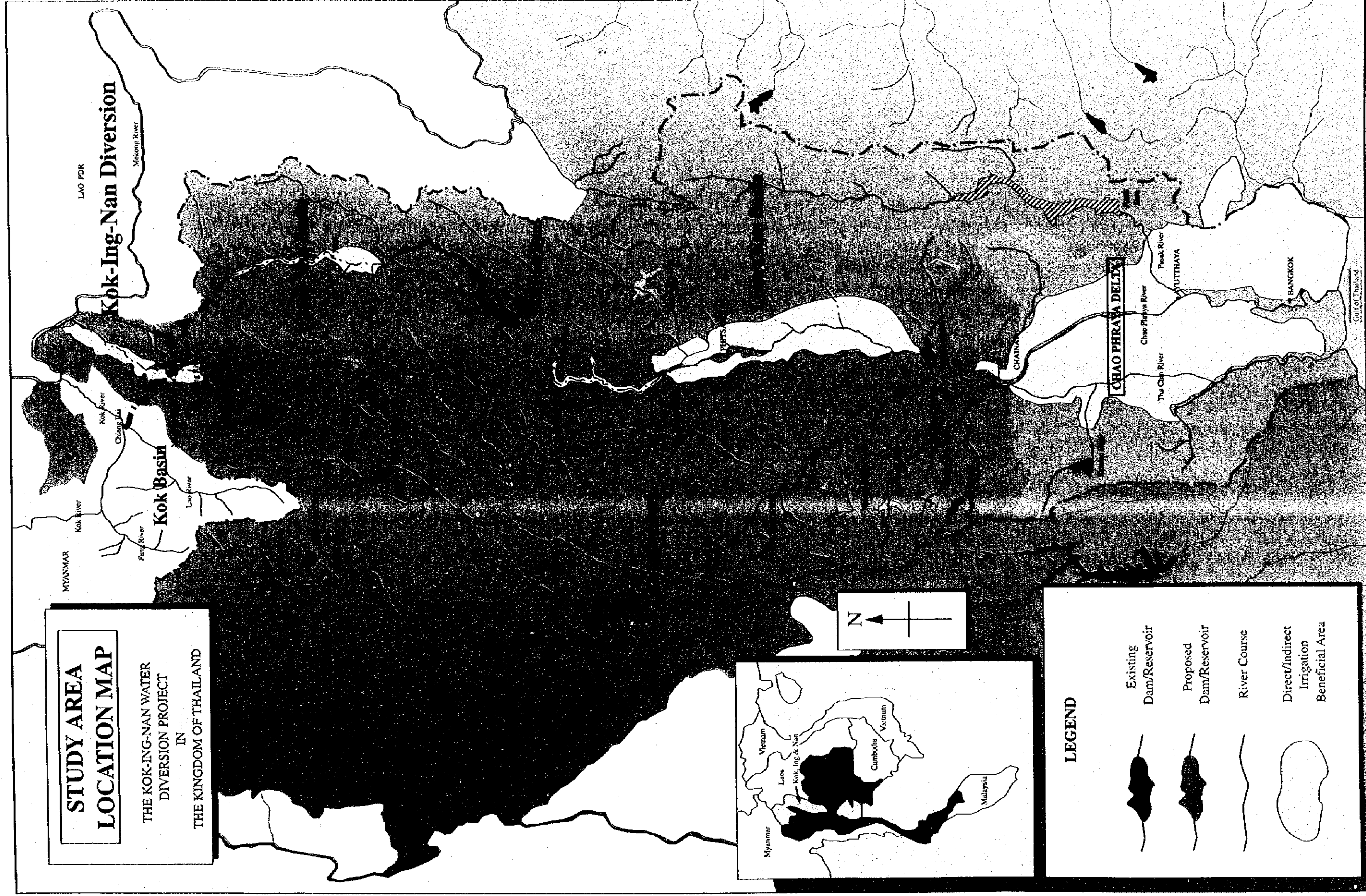
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**STUDY AREA
LOCATION MAP**

THE KOK-ING-NAN WATER
DIVERSION PROJECT
IN
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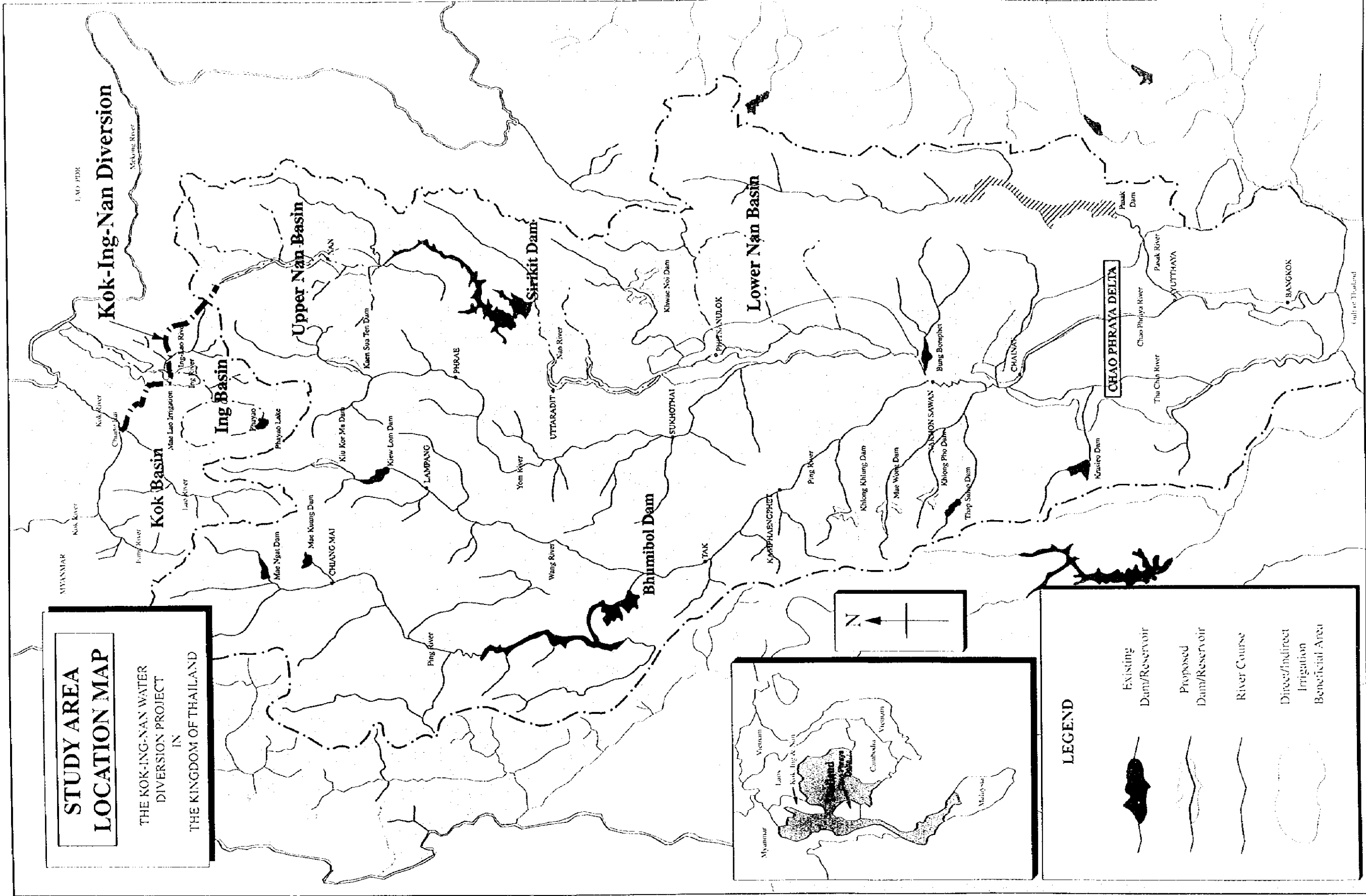


LEGEND

- Existing Dam/Reservoir
- Proposed Dam/Reservoir
- River Course
- Direct/Indirect Irrigation Beneficial Area

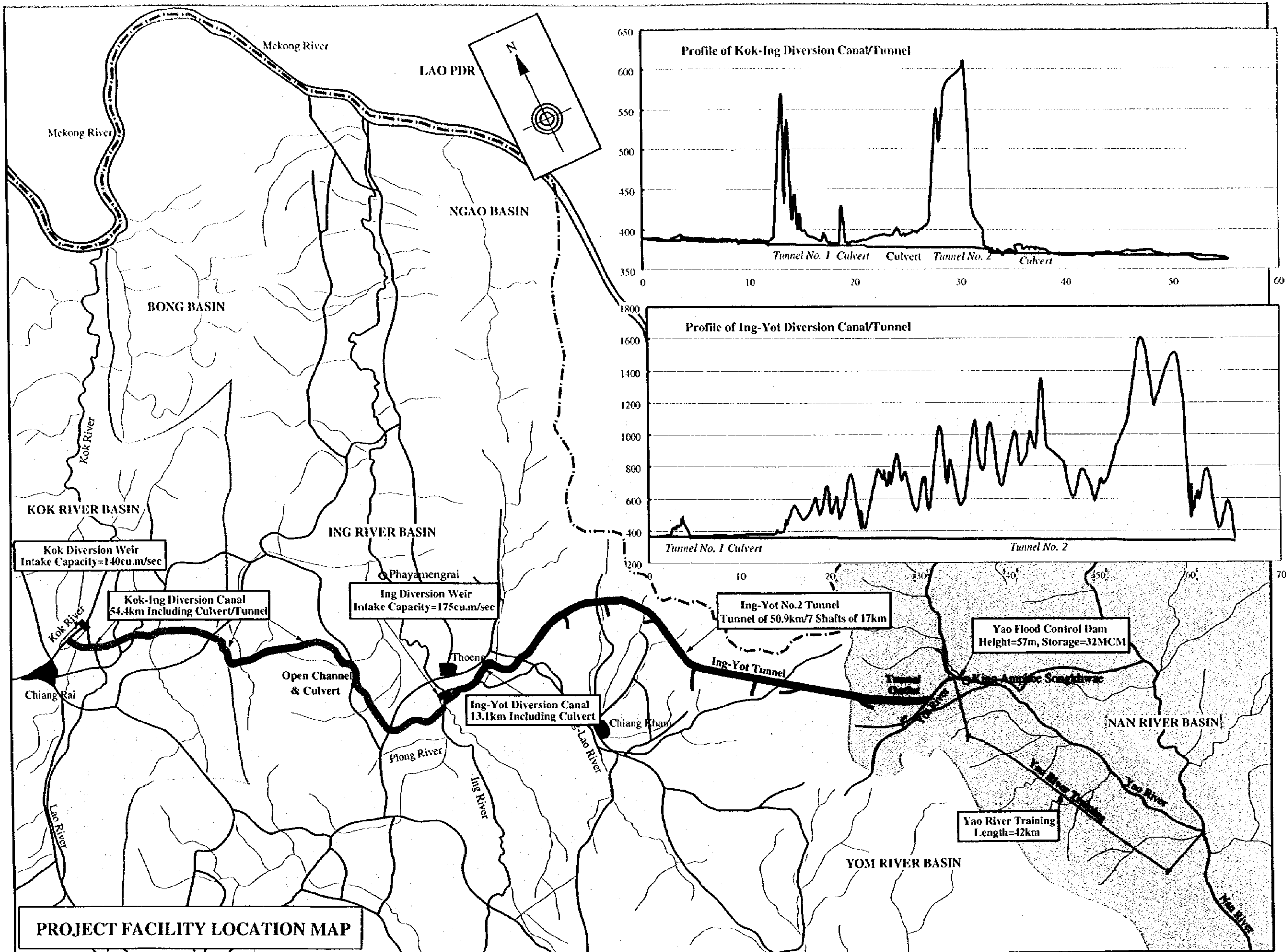
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- Existing Dam/Reservoir
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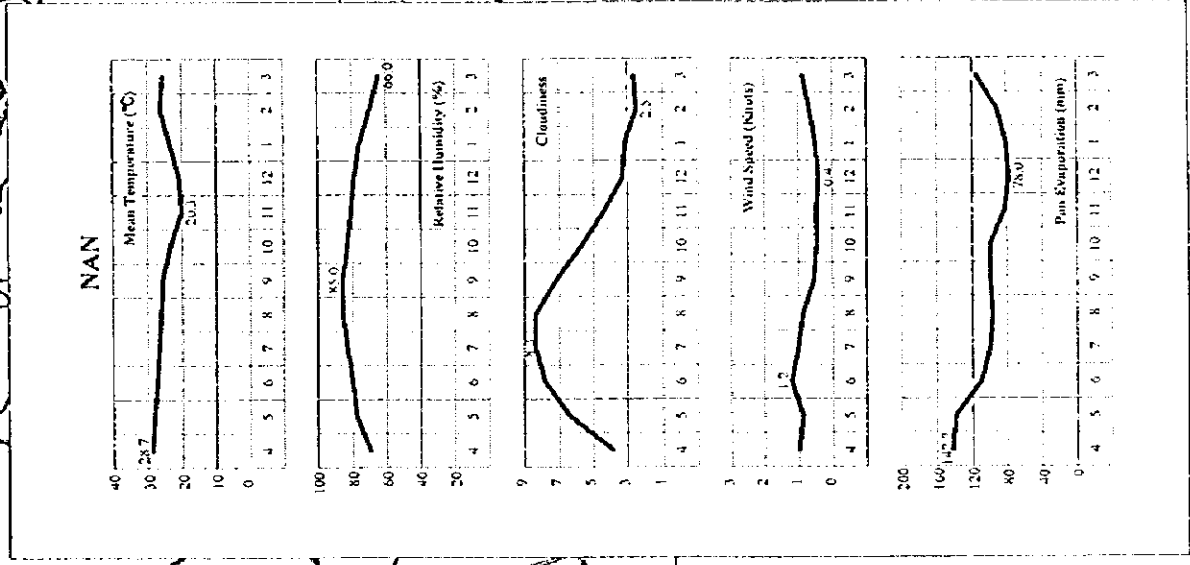
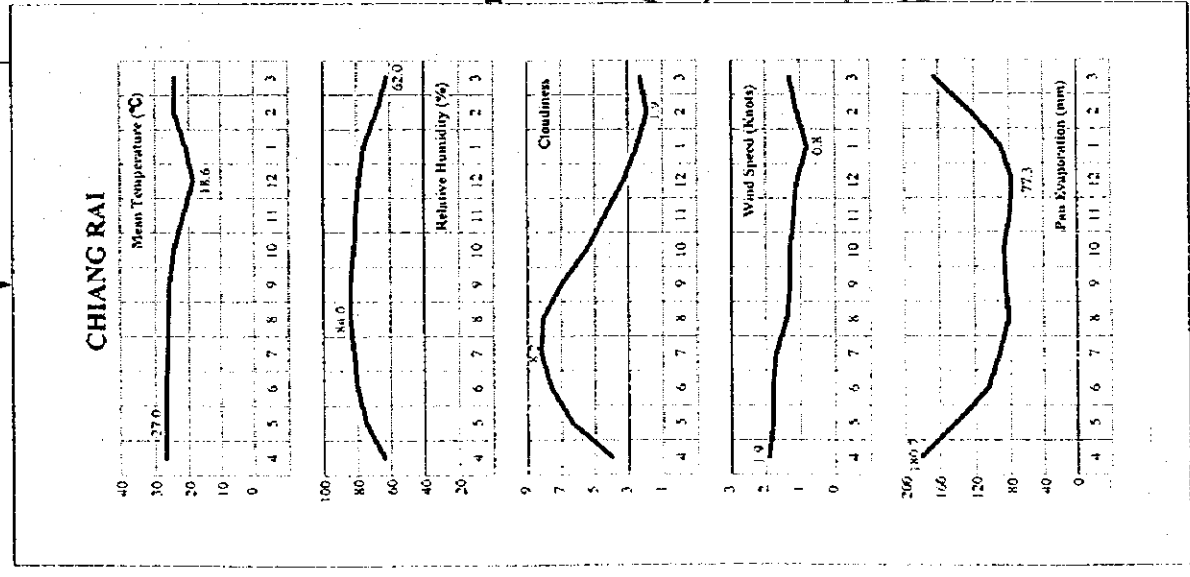
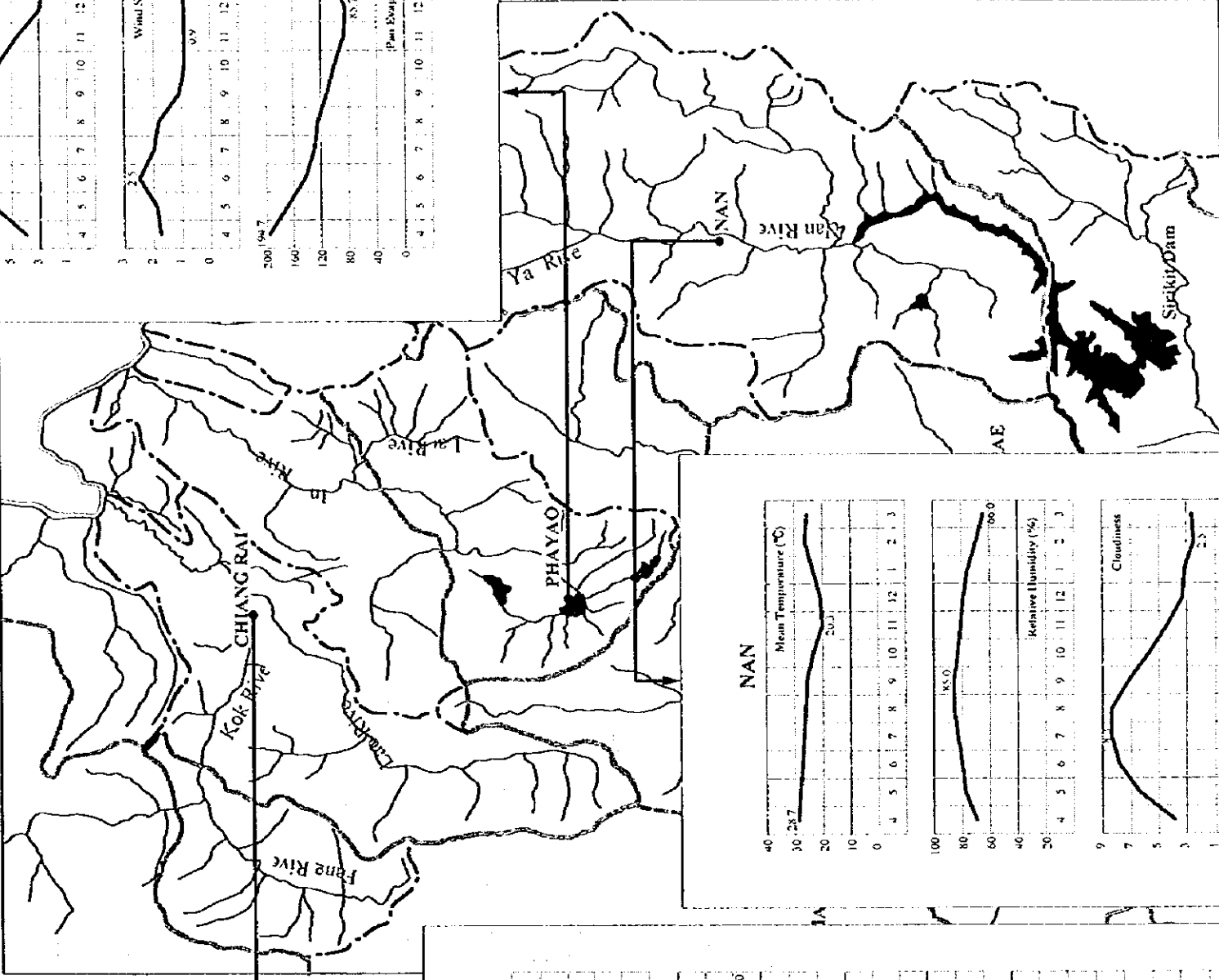
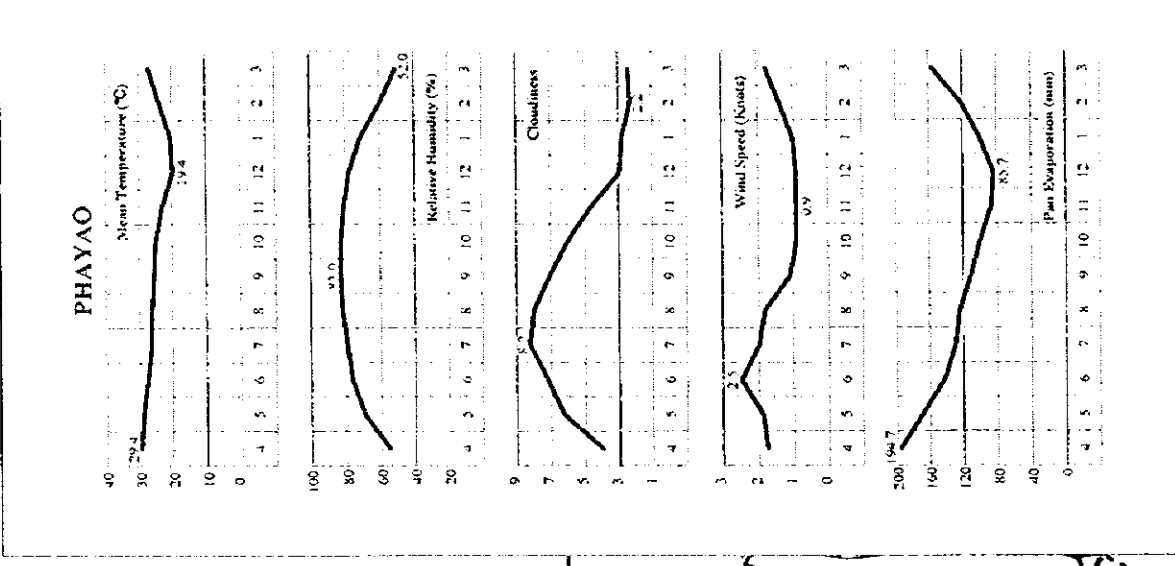
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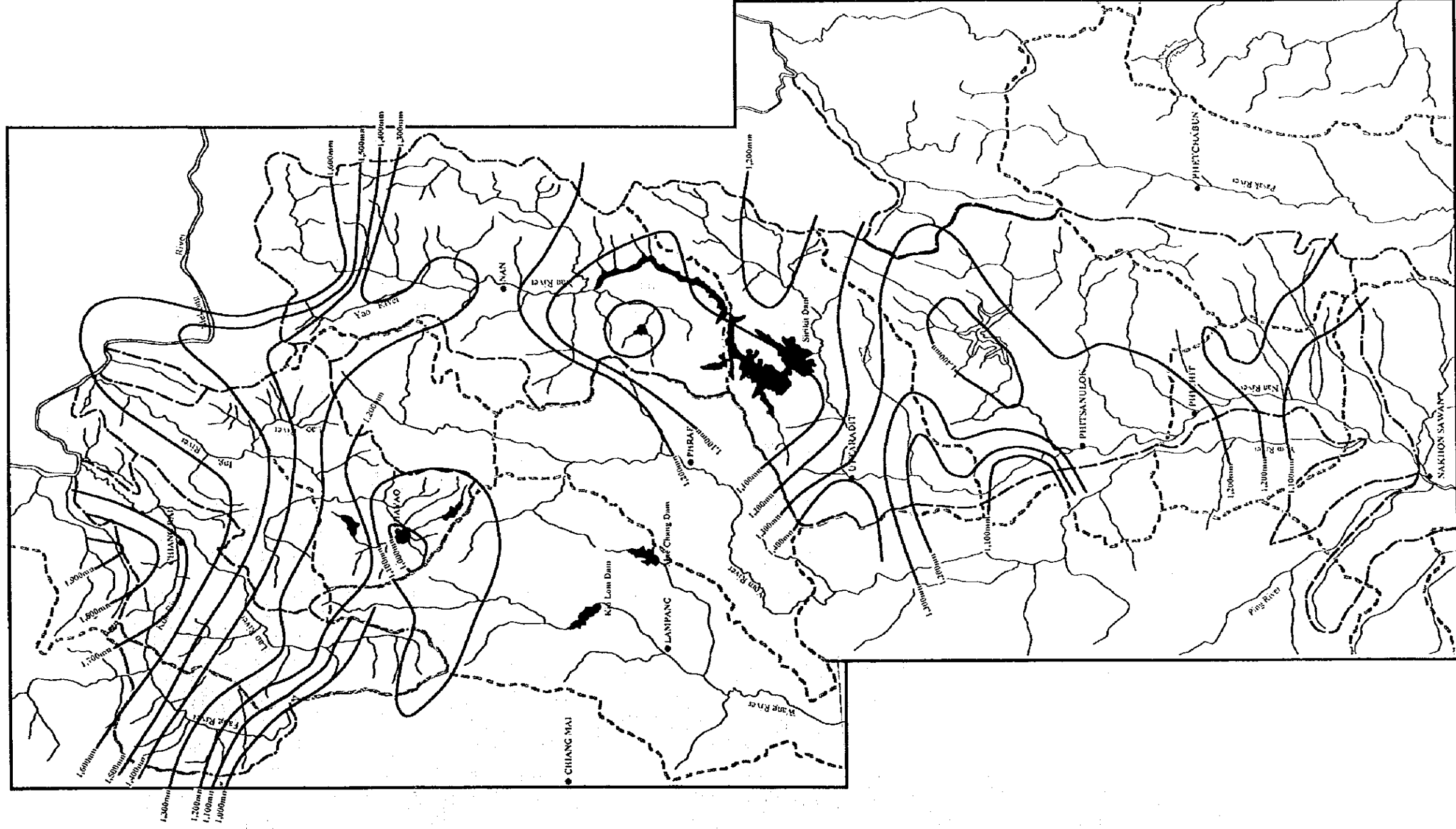
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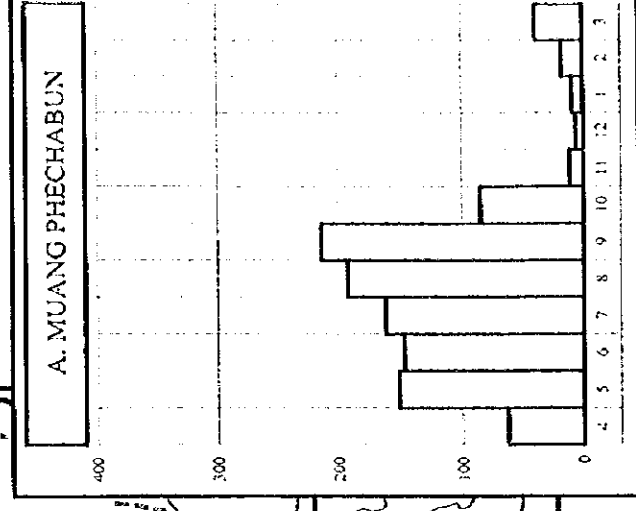
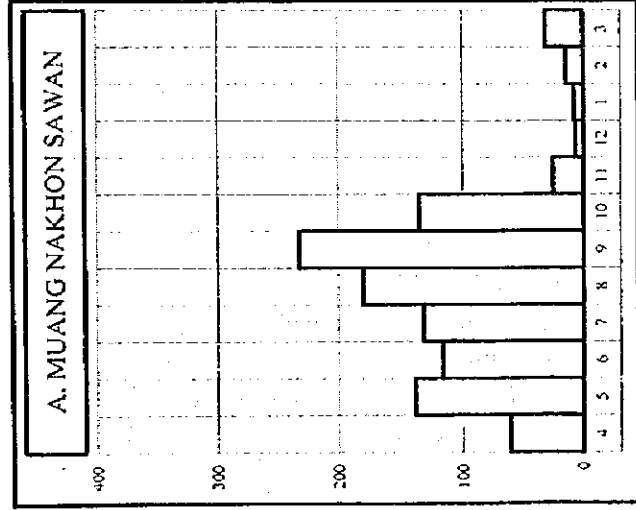
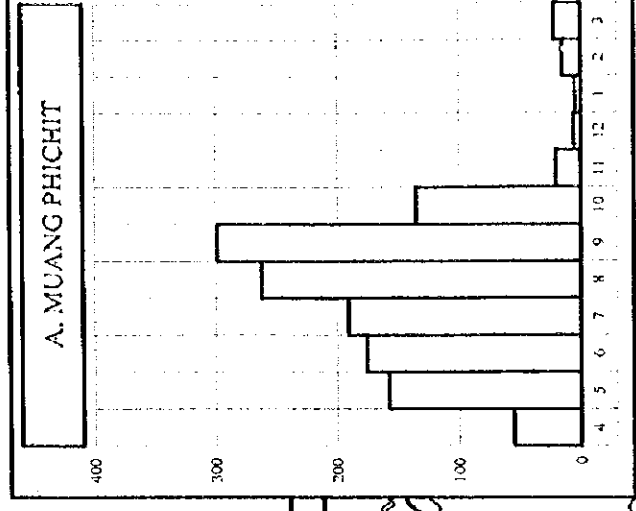
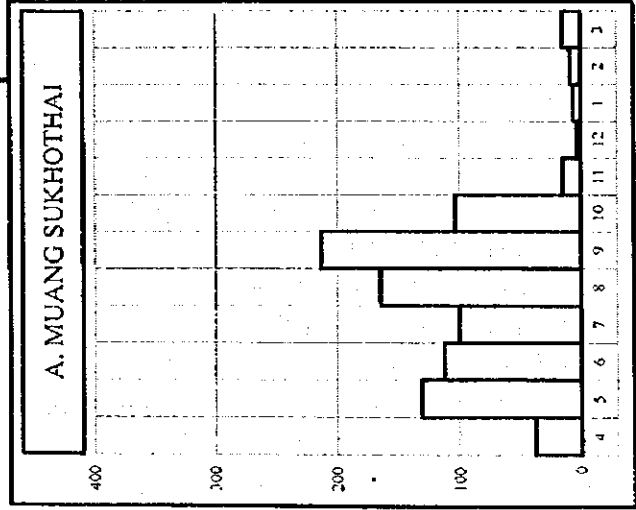
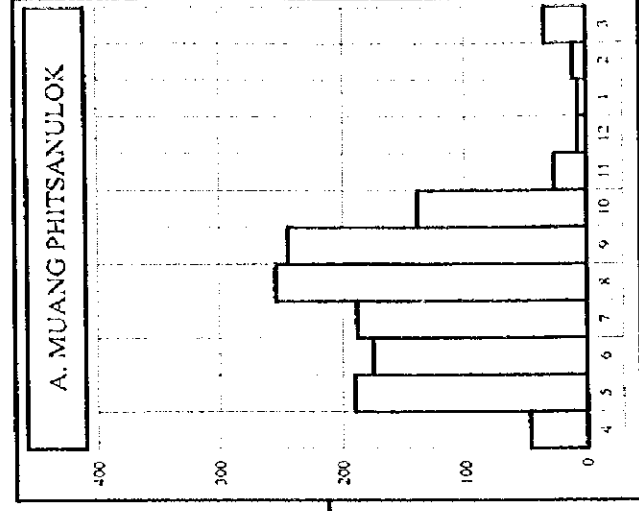
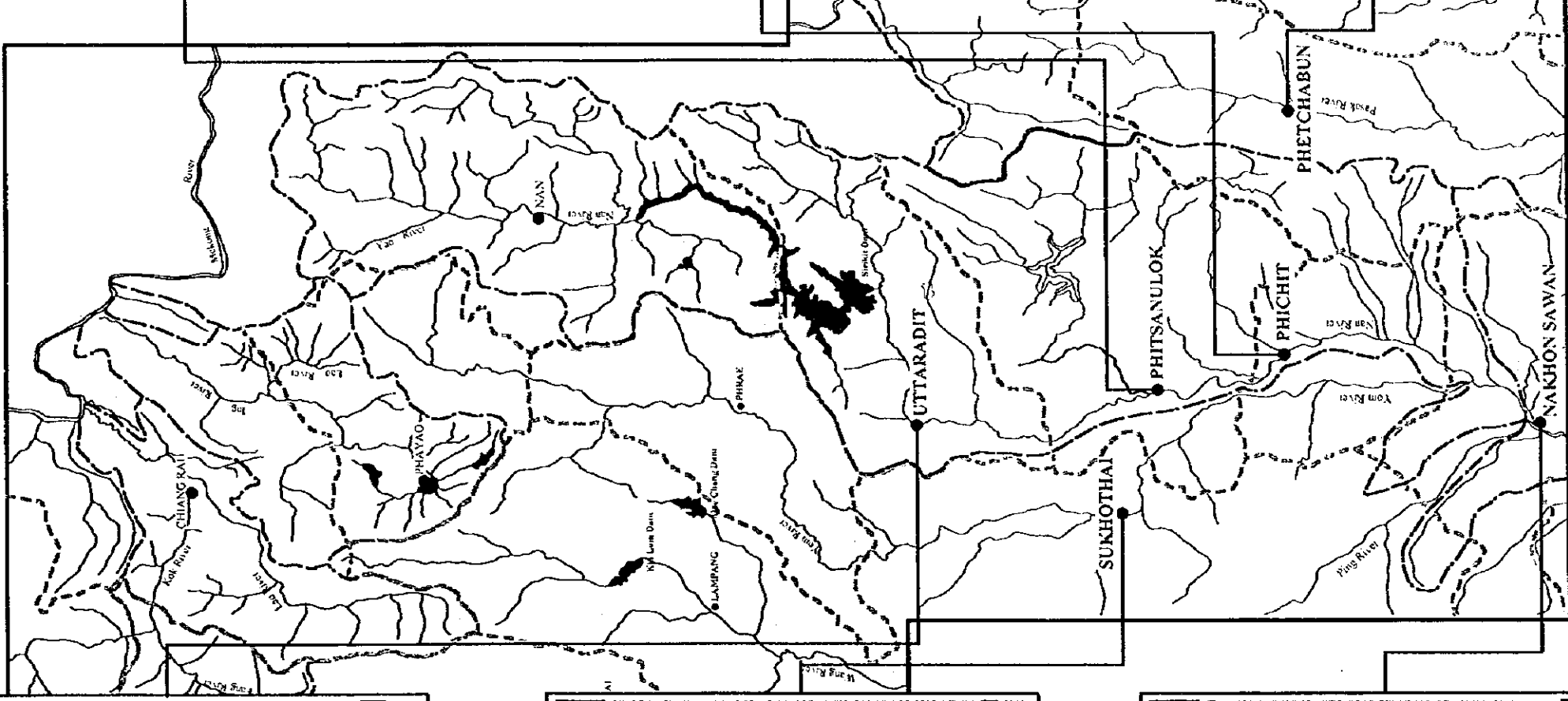
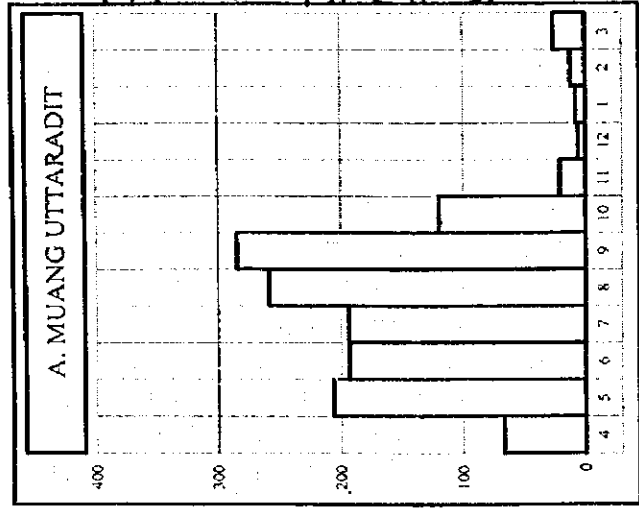
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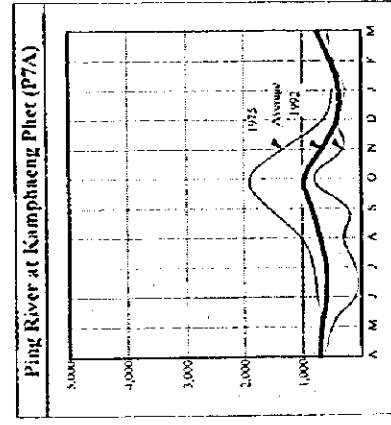
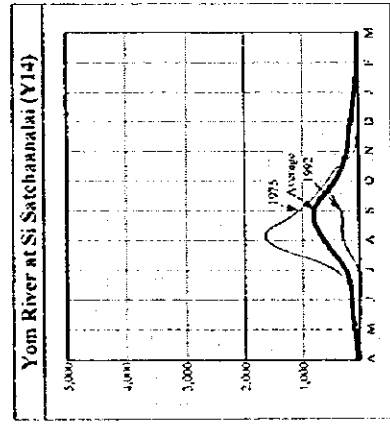
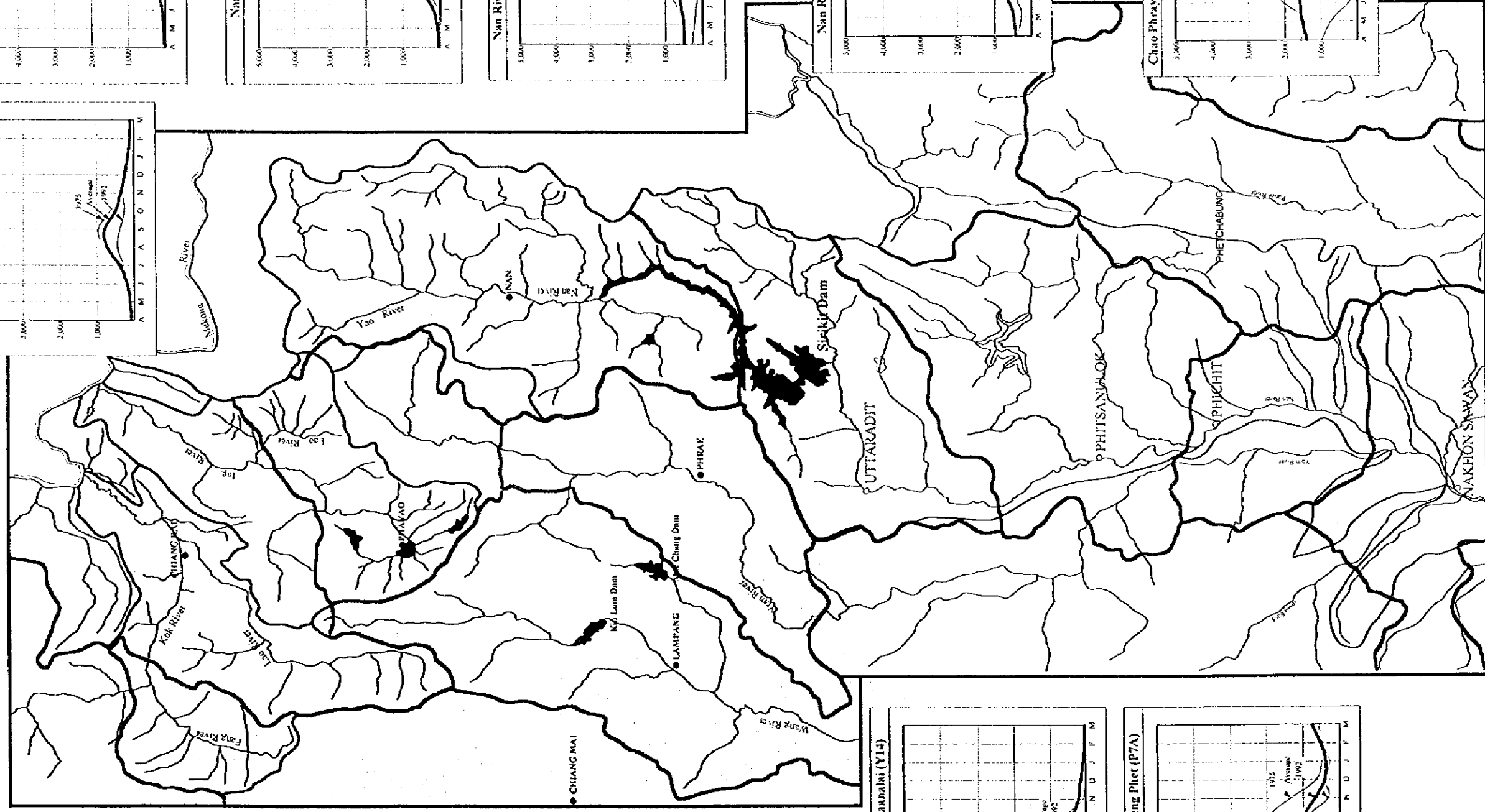
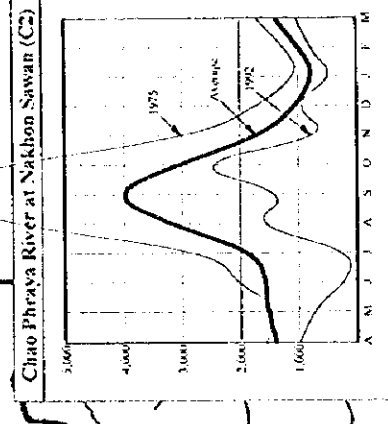
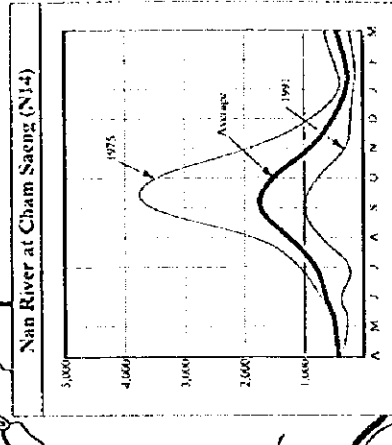
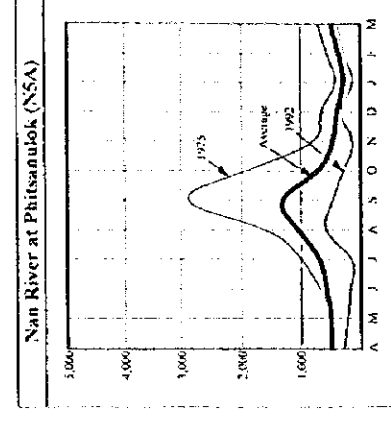
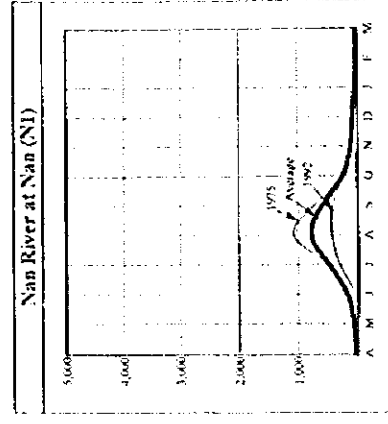
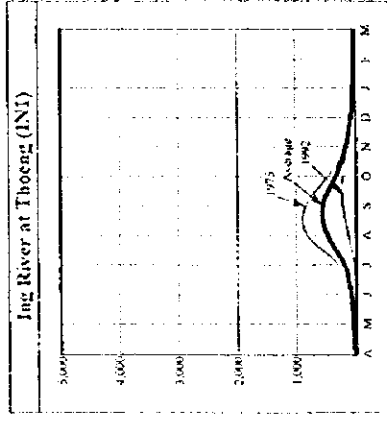
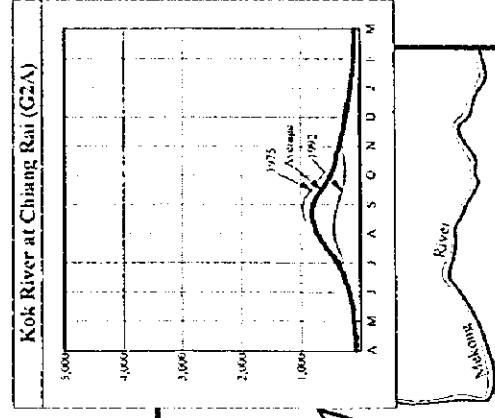
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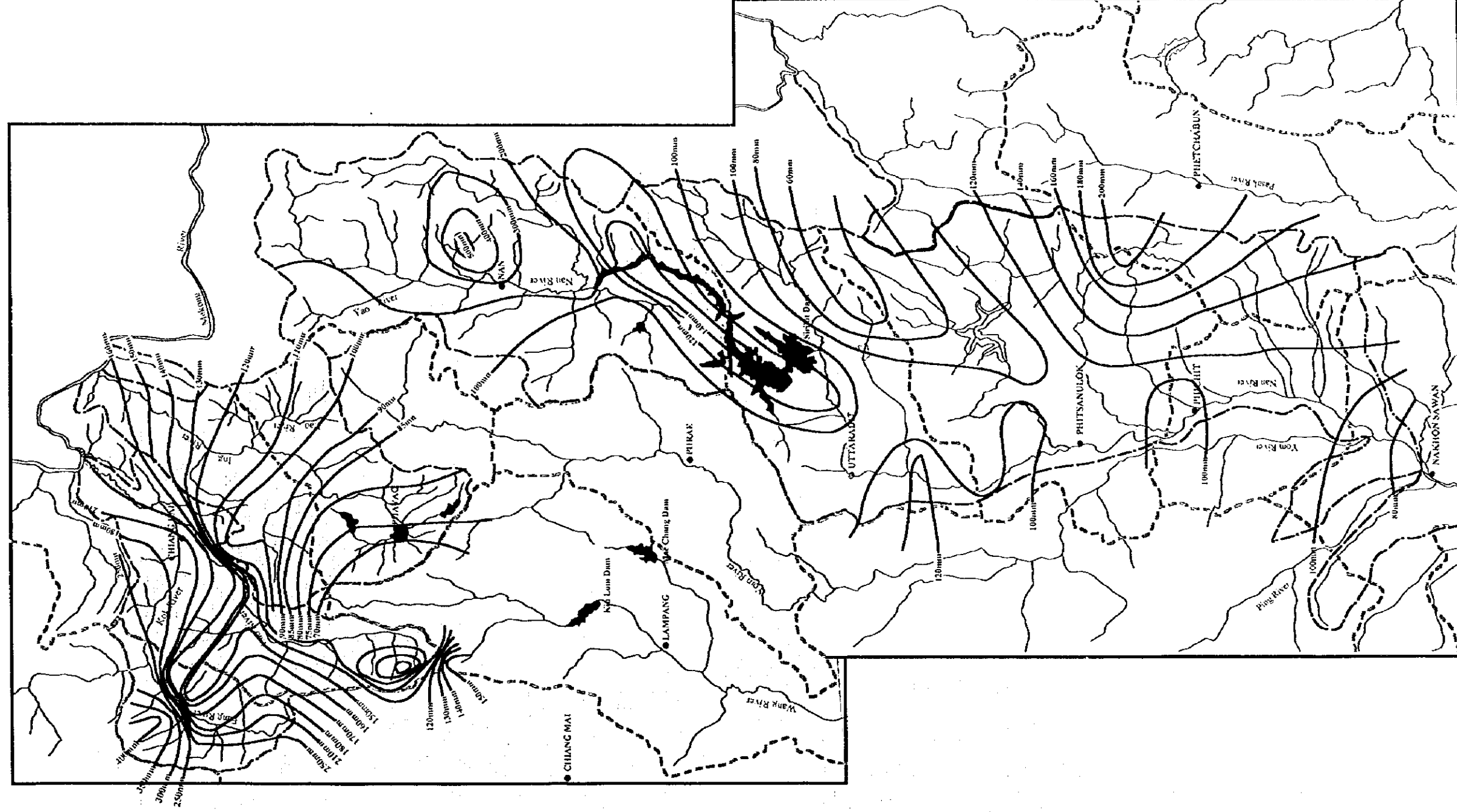


Note: Data are averages in 1974 - 1993.

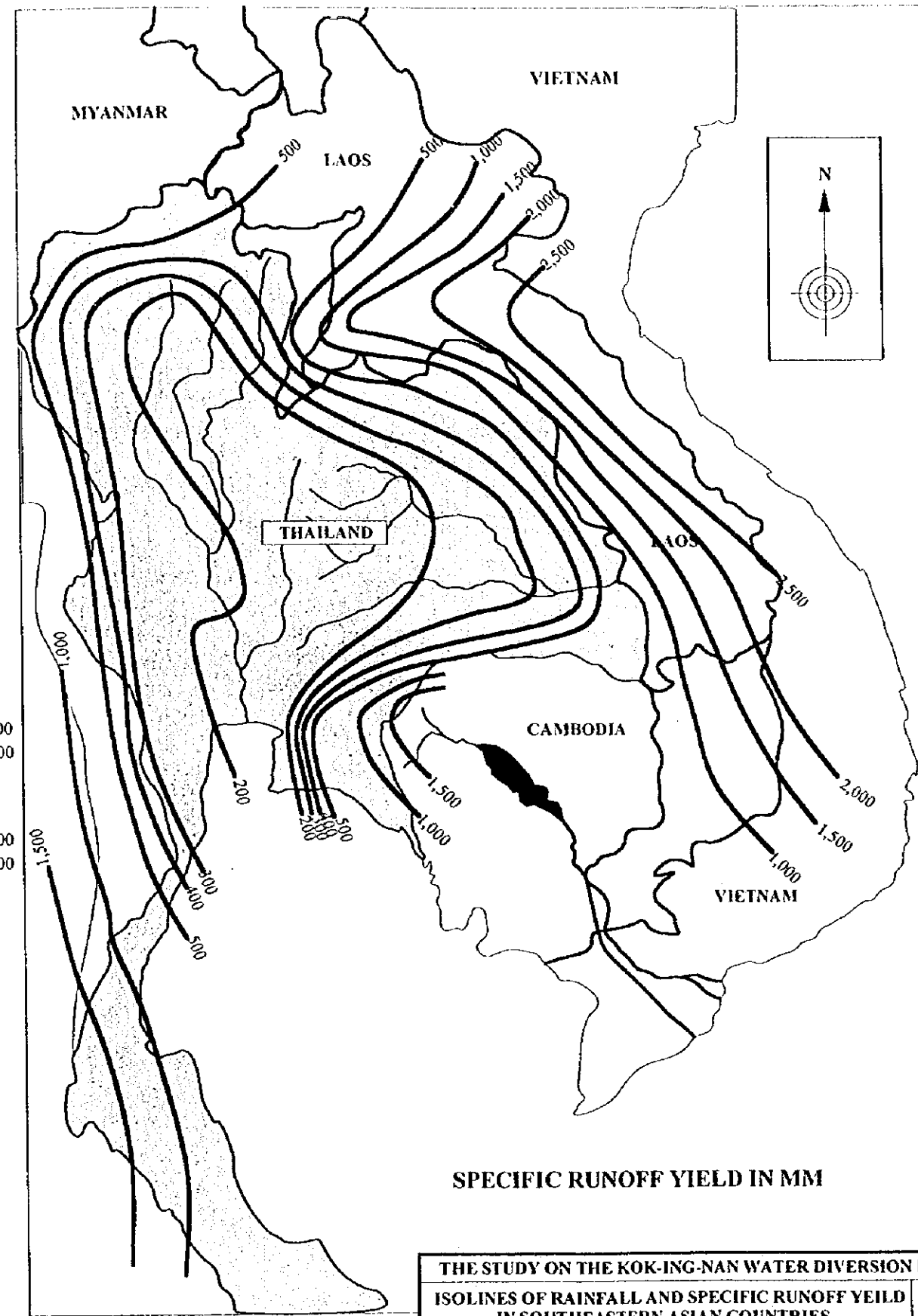
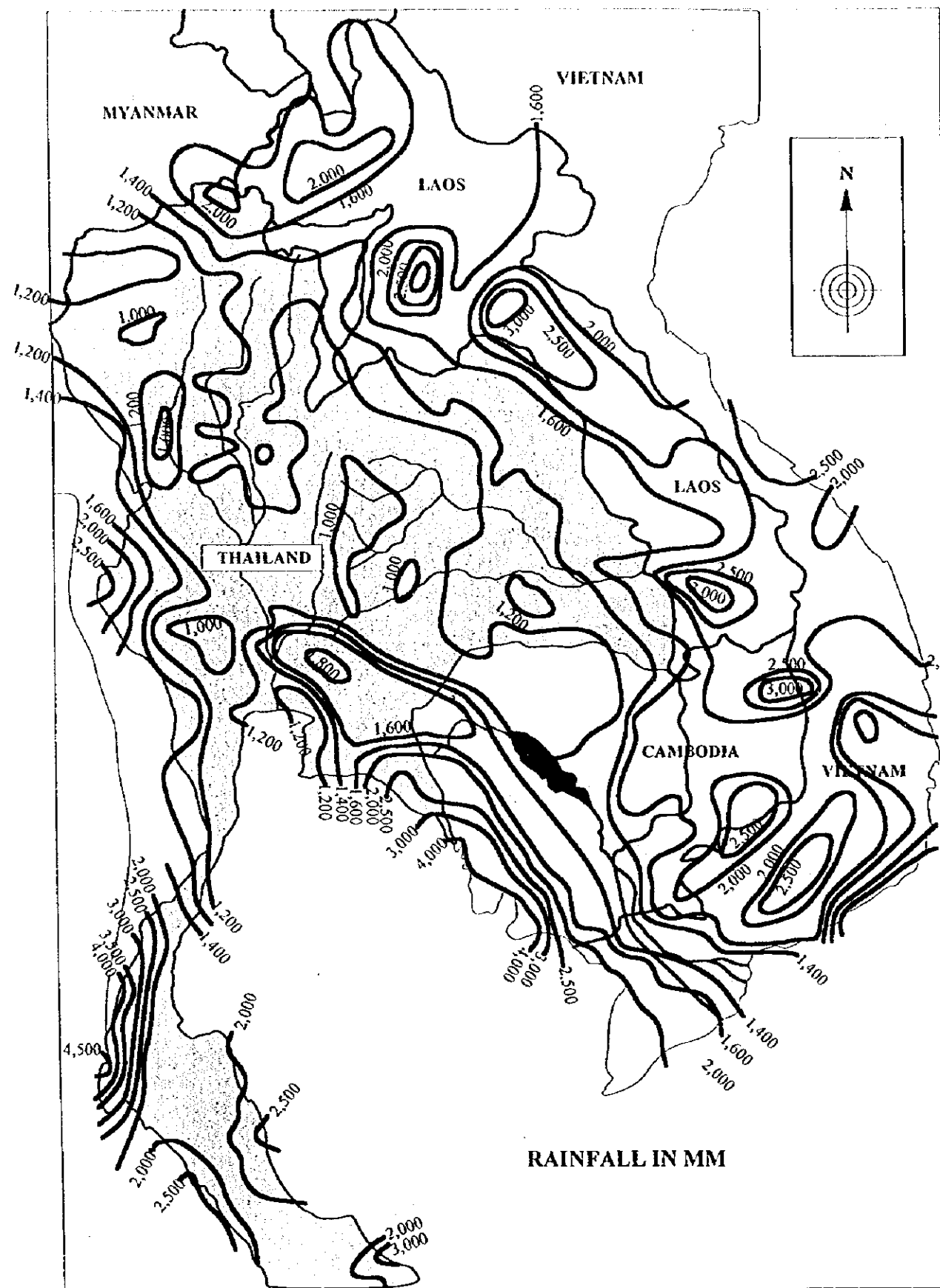


Note: Data are averages in 1974-1993.





THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT	
ISOLINES OF SPECIFIC RUNOFF YIELD IN KOK-ING AND UPPER NAN BASIN	Map & Drawing No
JAPAN INTERNATIONAL COOPERATION AGENCY(JICA)	I-6
SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.	



THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT	
ISOLINES OF RAINFALL AND SPECIFIC RUNOFF YIELD IN SOUTHEASTERN ASIAN COUNTRIES	Map & Drawing No.
JAPAN INTERNATIONAL COOPERATION AGENCY(JICA) SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.	1-7

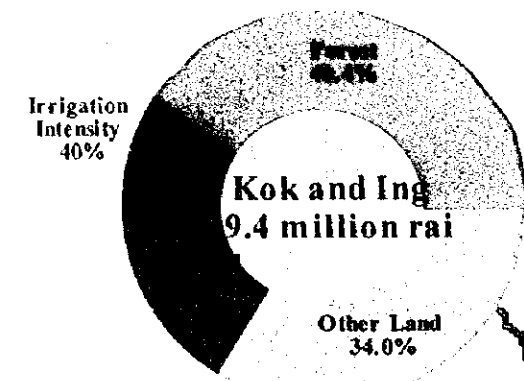
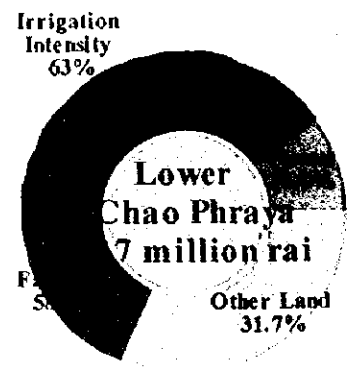
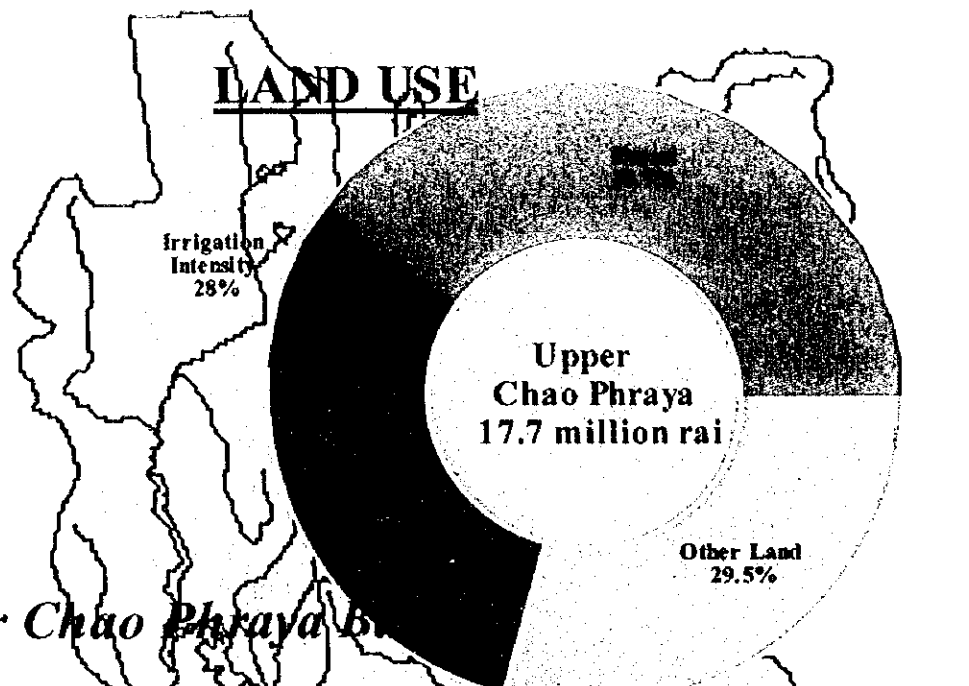
PART II	SOCIO-ECONOMIC CONDITIONS
II-1	General Socio-Economic Indicators in Kok, Ing, Upper and Lower Chao Phraya Basins (1)
II-2	General Socio-Economic Indicators in Kok, Ing, Upper and Lower Chao Phraya Basins (2)
II-3	Diversified Agriculture and Agro-Industry
II-4	Distribution of Livestock Breeding and Freshwater Aquaculture Activity
II-5	Quantity Index of Various Crops
II-6	Food Supply per Capita per Year

Upper Chao Phraya Basin

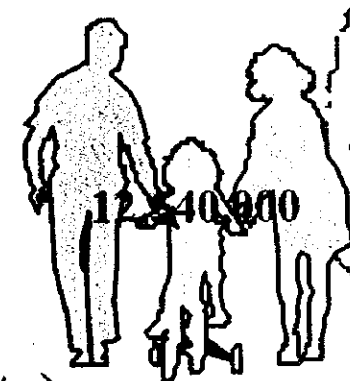
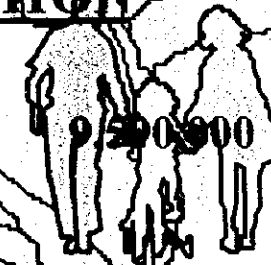
Lower Chao Phraya Basin

Kok and Ing Basins

LAND USE



POPULATION

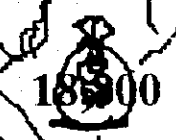
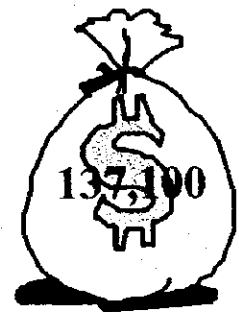


Kok Basin

1,500,000

Ing Basin

GROSS BASIN PRODUCTS (Baht/Capita)

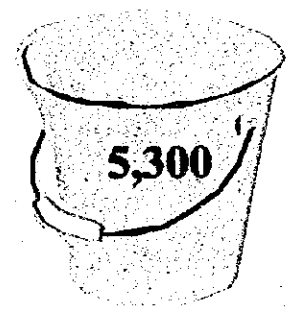


Lower Chao Phraya Basin

WATER RESOURCES (cu.m/Capita)



360



Map & Drawing No.

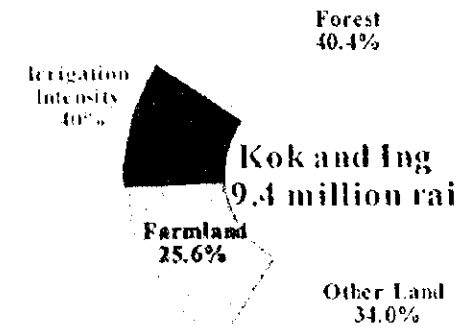
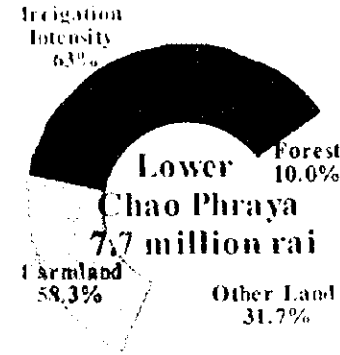
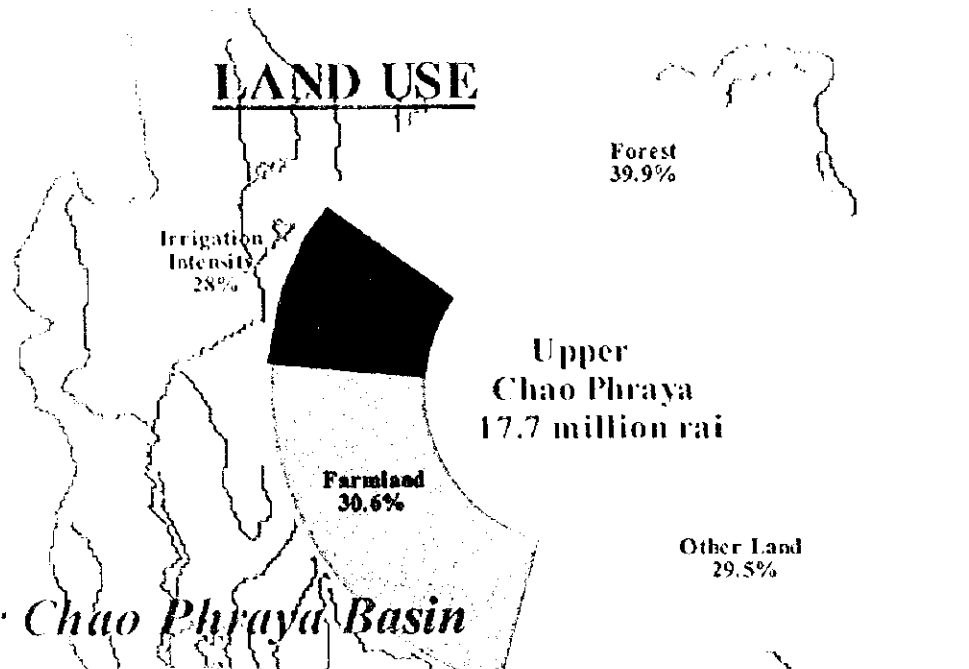
II-1

Upper Chao Phraya Basin

Lower Chao Phraya Basin

Kok and Ing Basins

LAND USE



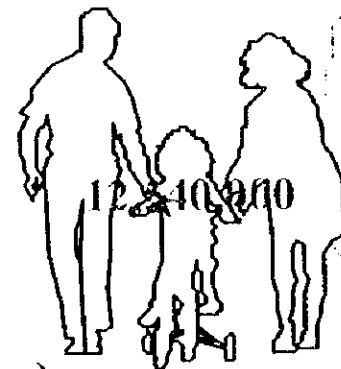
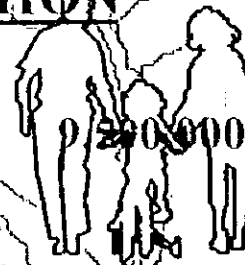
Upper Chao Phraya
17.7 million rai

Lower Chao Phraya
7.7 million rai

Kok and Ing
9.4 million rai

Upper Chao Phraya Basin

POPULATION



GROSS BASIN PRODUCTS (Baht/Capita)



Lower Chao Phraya Basin

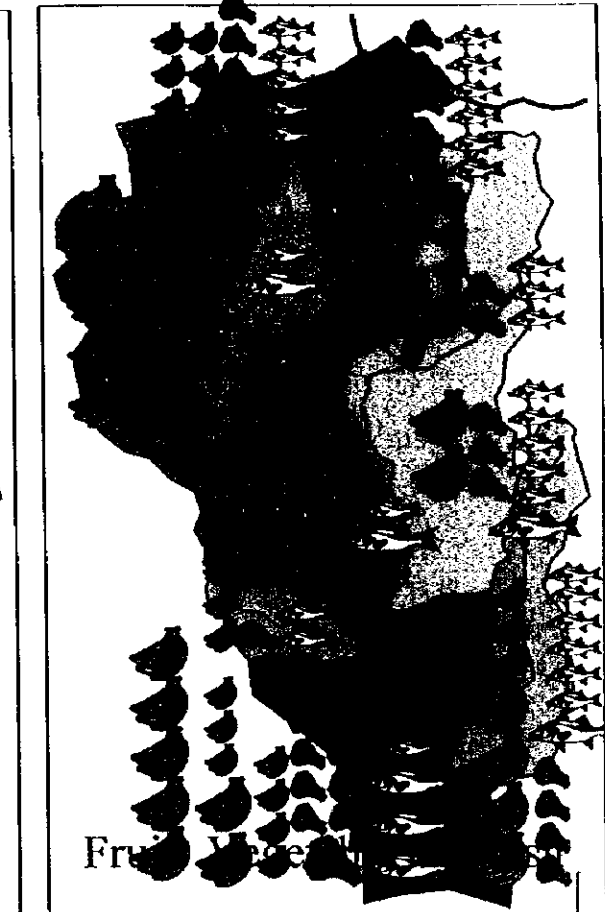
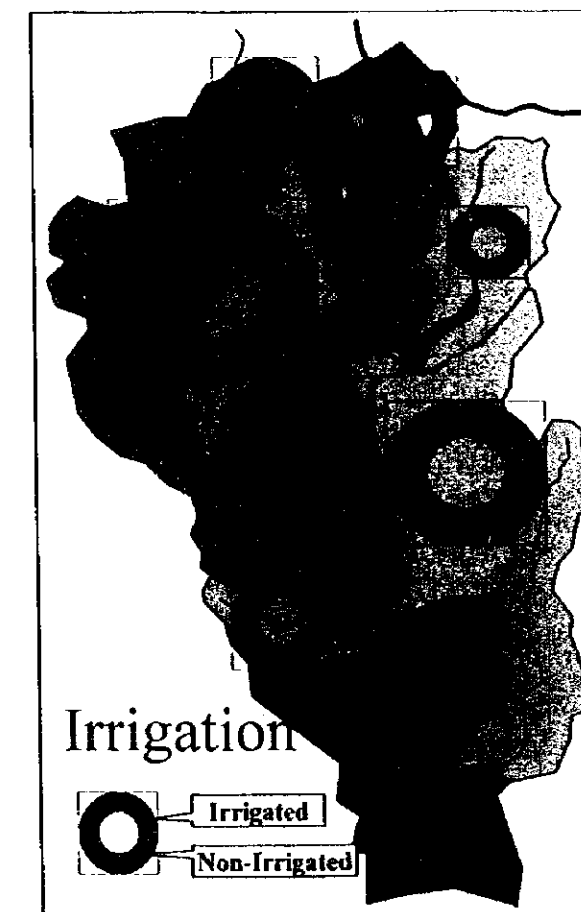
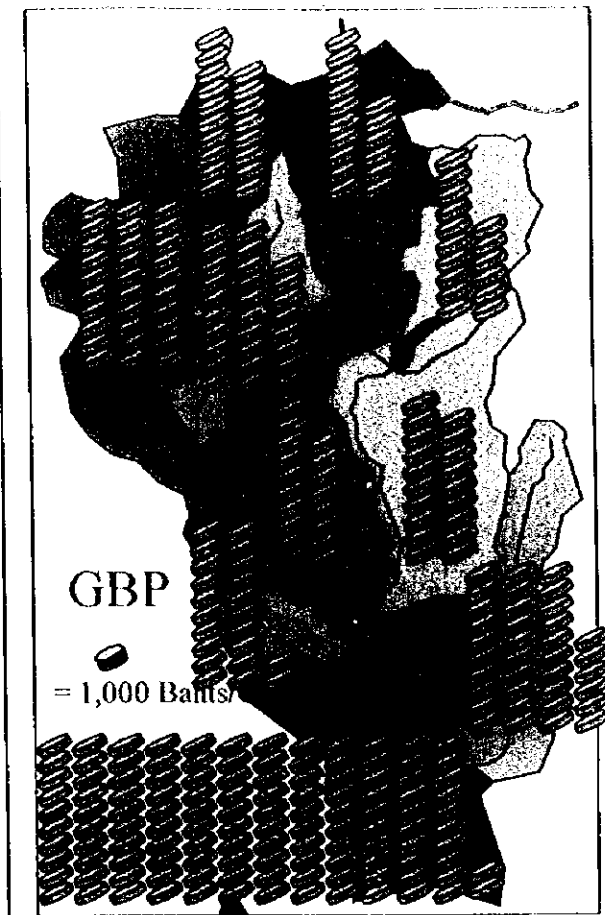
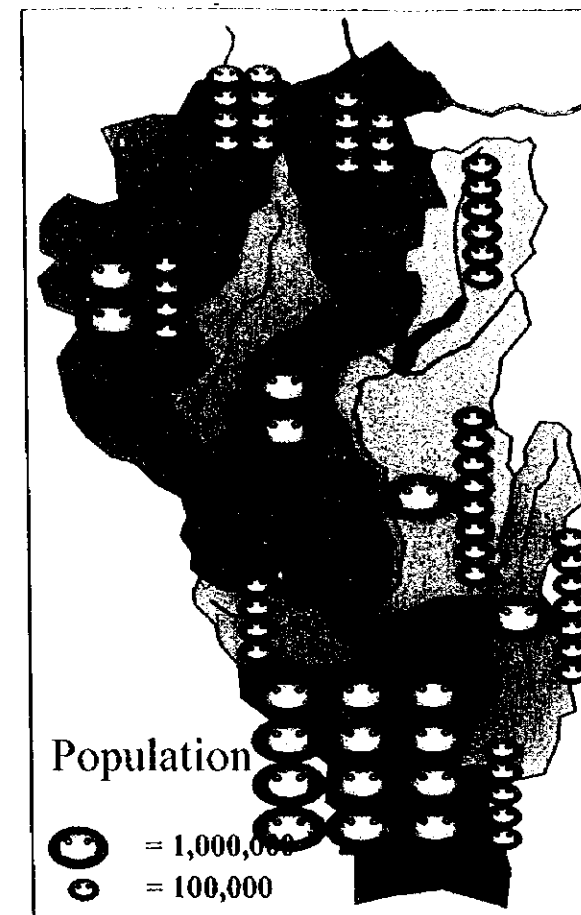
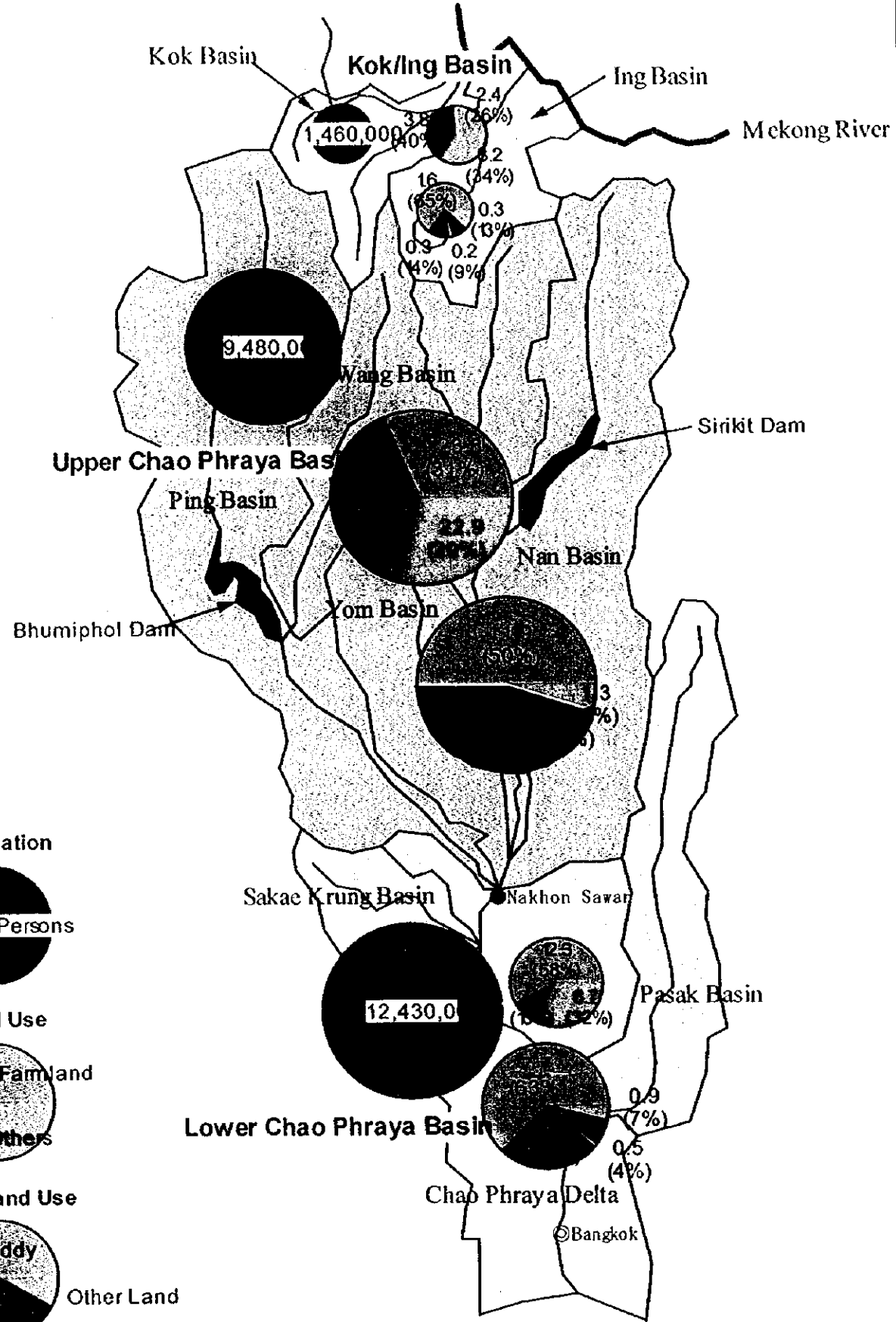
WATER RESOURCES (cu.m/Capita)

2,900

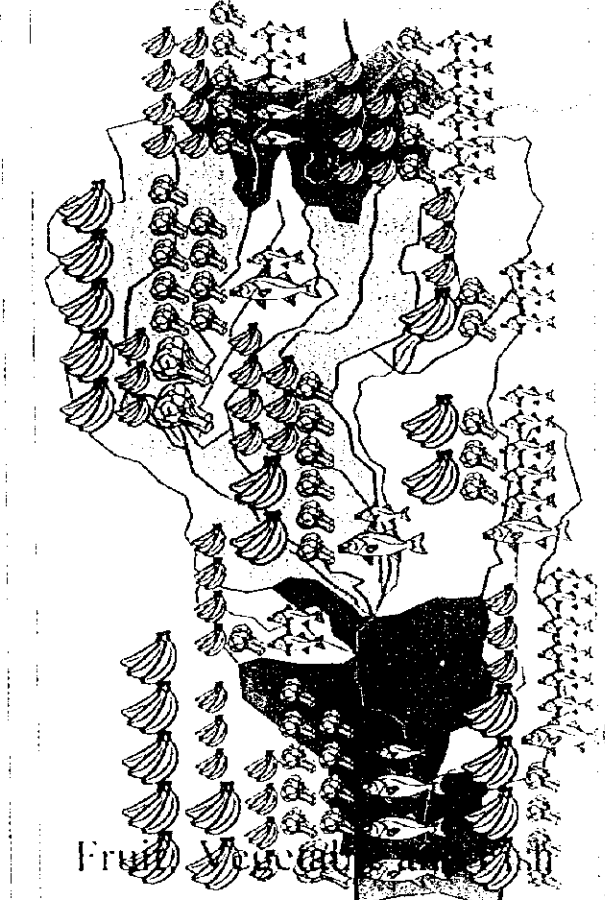
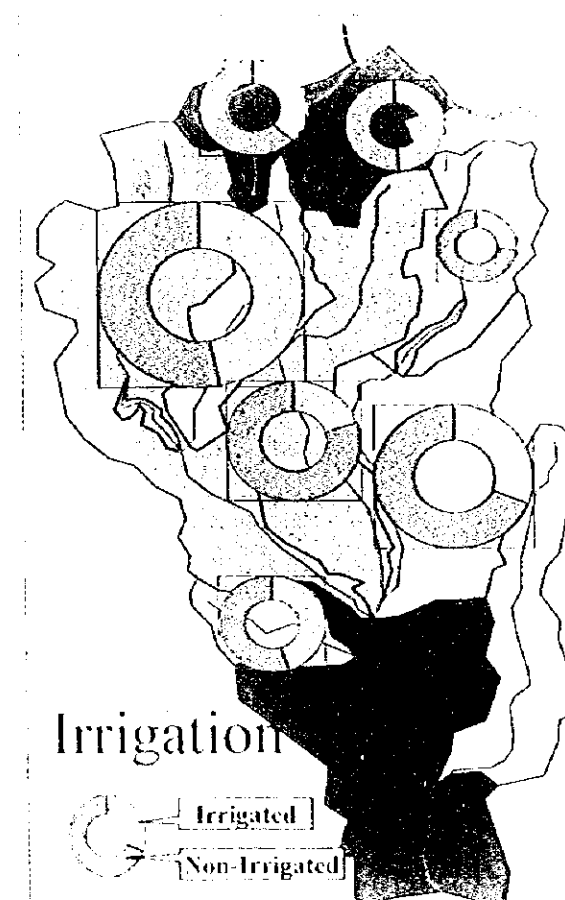
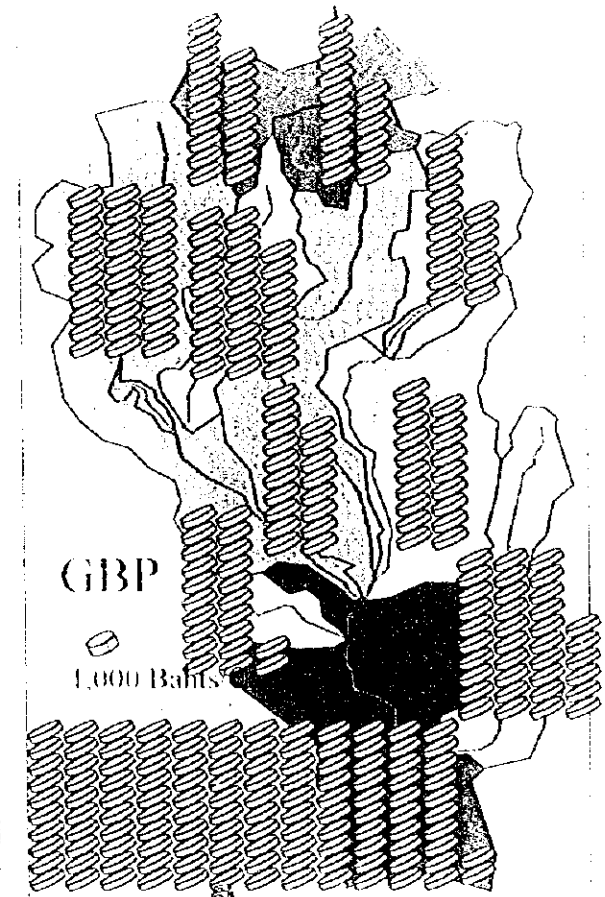
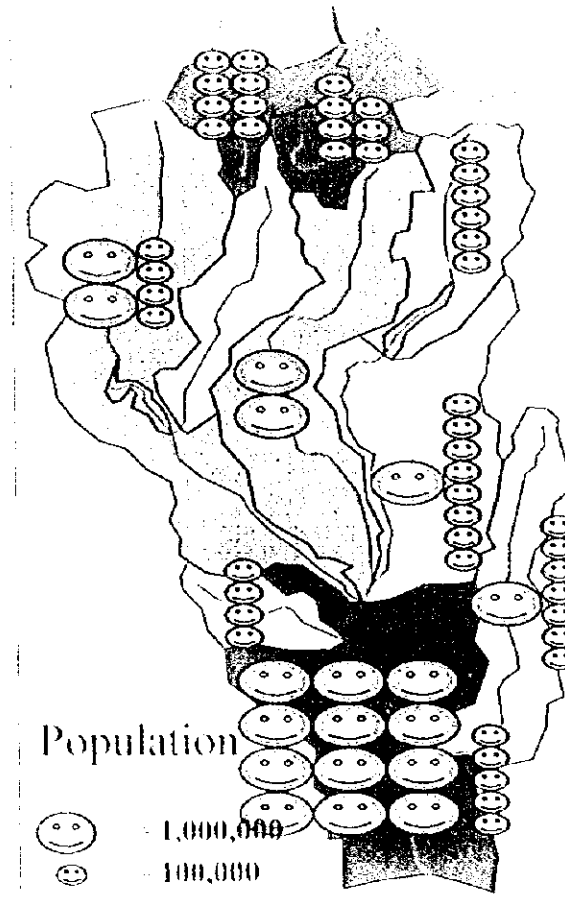
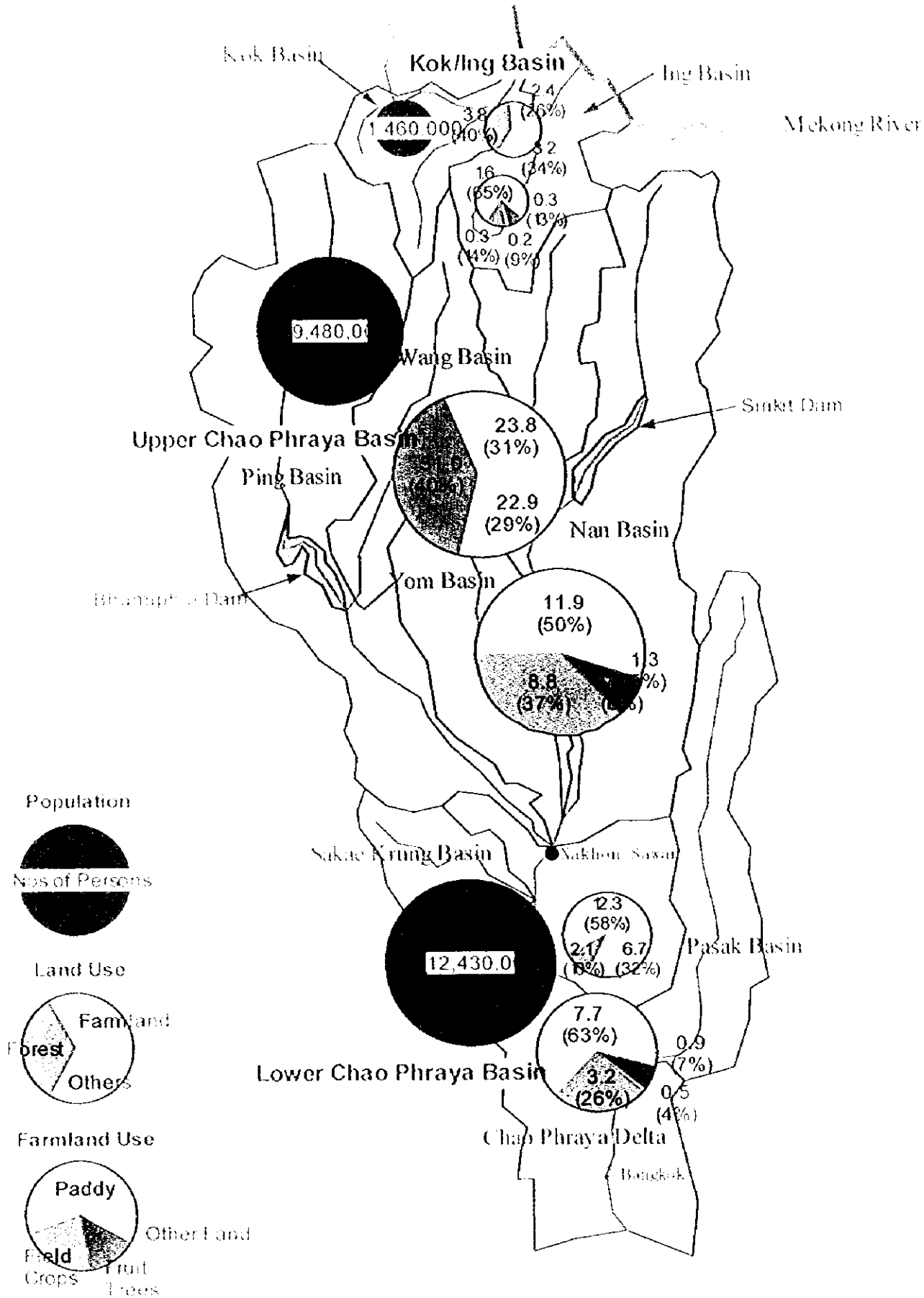
360

5,300

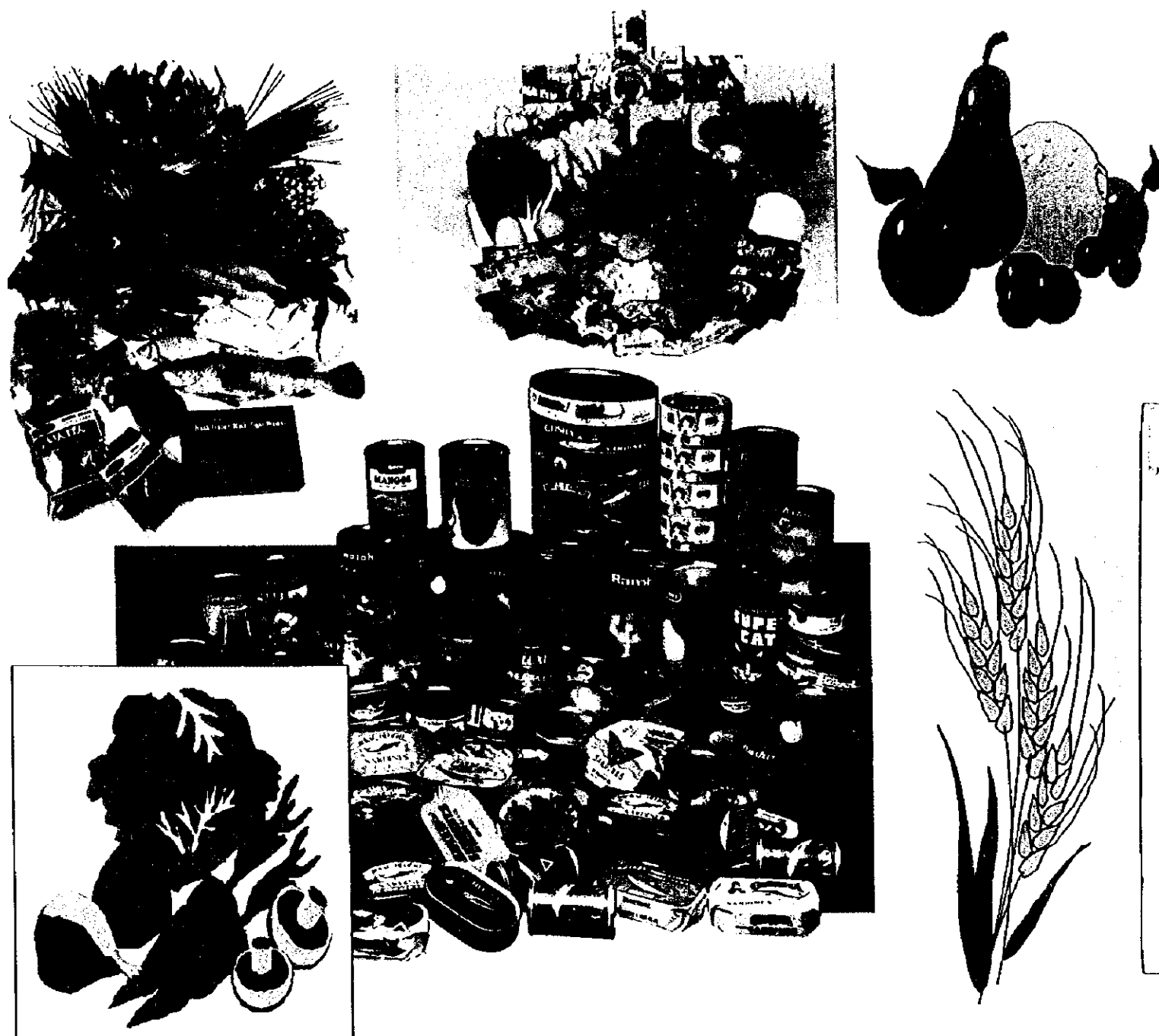
Basin Characteristics (Chao Phraya Basin and Kok/Ing Basins)



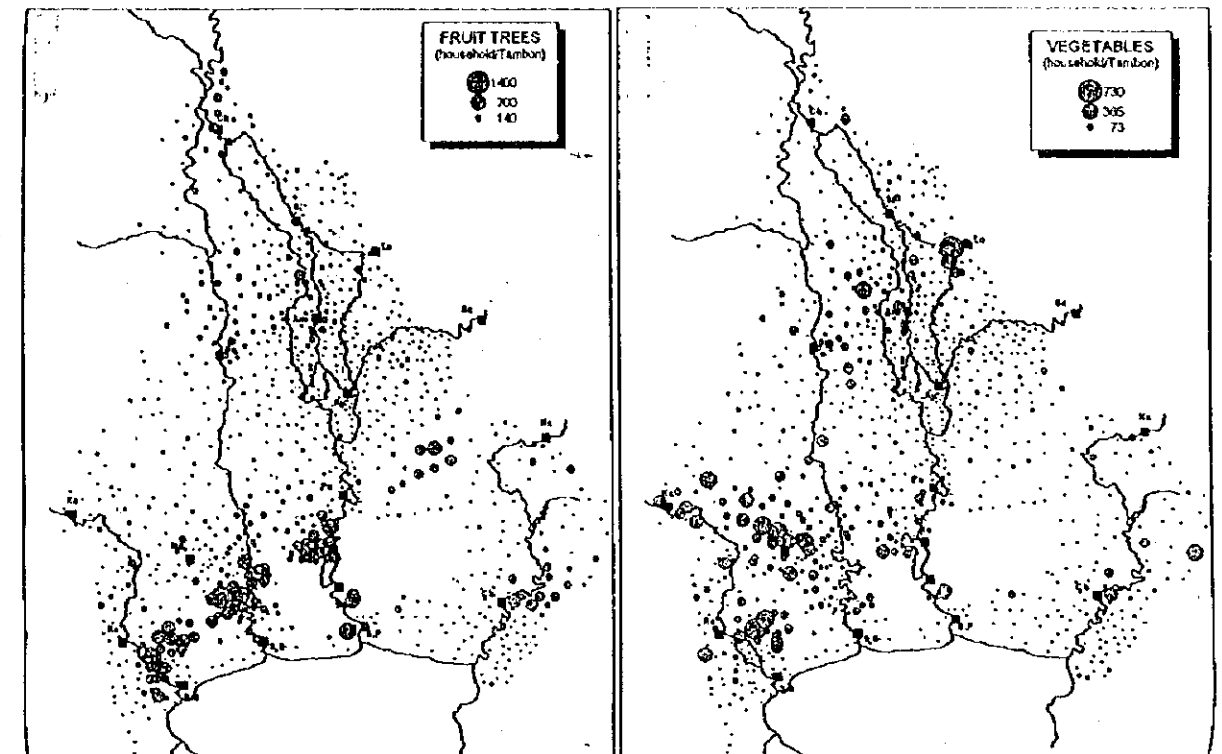
Basin Characteristics (Chao Phraya Basin and Kok/Ing Basins)



Diversified Agriculture and Agro-Industry



Area Distribution of Fruit and Vegetable in Delta



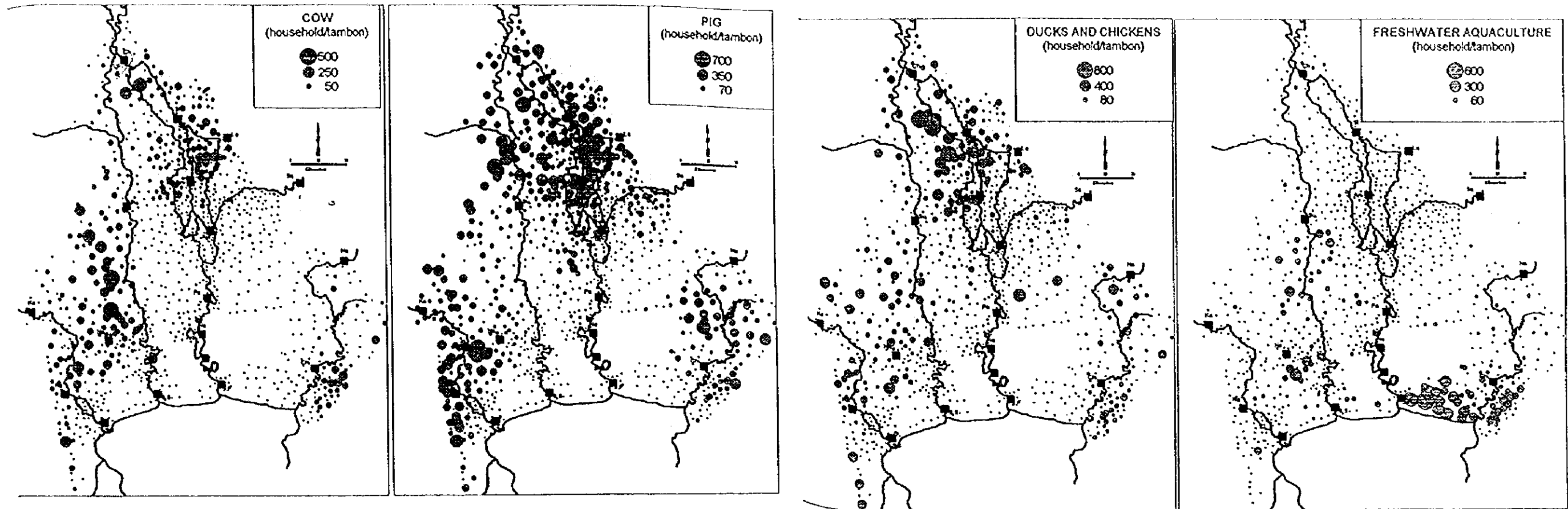
Present and Future Cropped Area for Diversified Crops in the Delta

	100,000	200,000	300,000	400,000	500,000
Sugarcane	Present Area in 1996	Future Area in 2016			
Fruit Trees	Present Area in 1996	Future Area in 2016			
Fish Pond	Present Area in 1996	Future Area in 2016			
Field Crops	Present Area in 1996	Future Area in 2016			
Vegetable	Present Area in 1996	Future Area in 2016			

Present Area in 1996
 Future Area in 2016



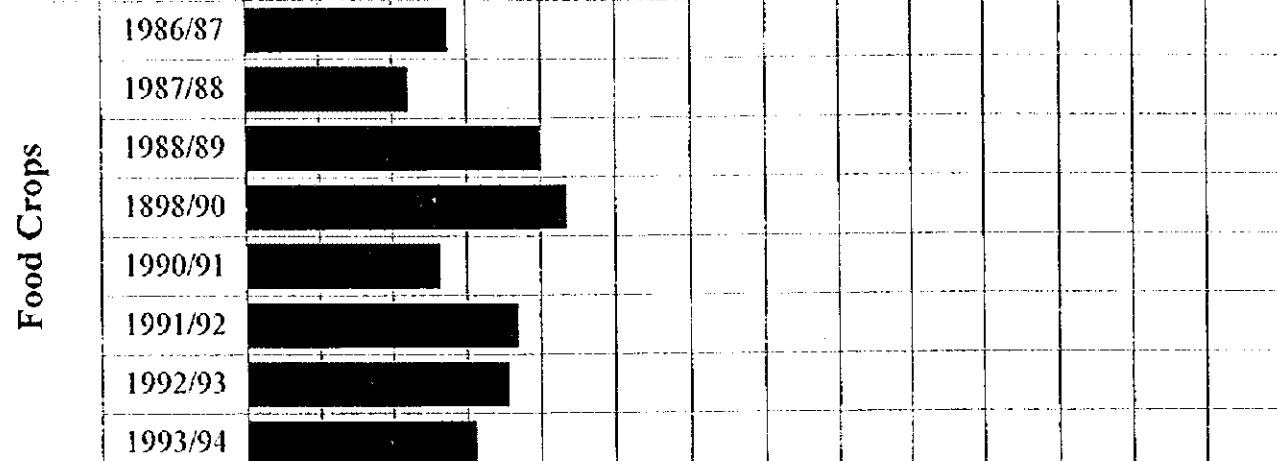
Distribution of Livestock Breeding and Freshwater Aquaculture Activity (Data source: DORAS)



Number of Livestock and Freshwater Culture Conditions in Delta

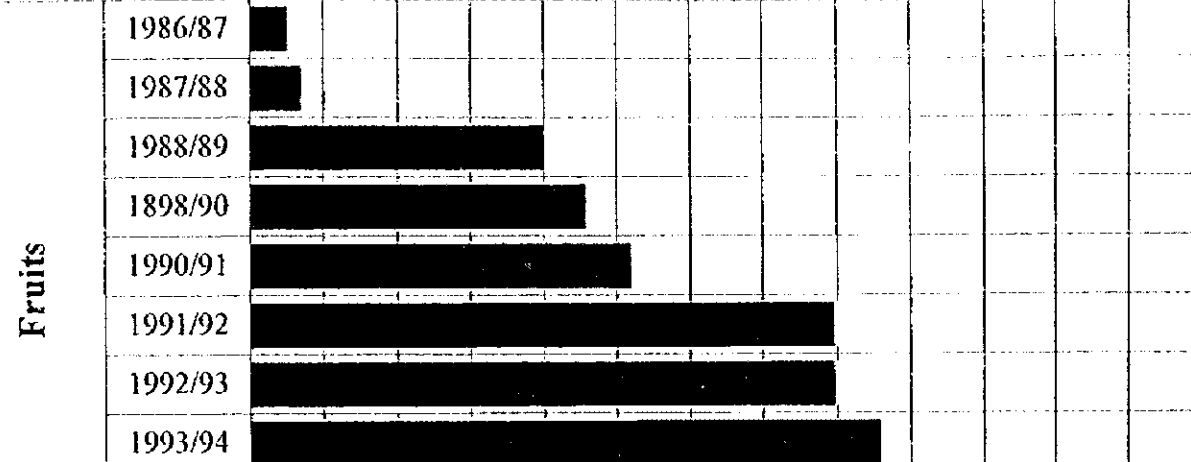
Province	Unit	Kamphaeng Phet	Nakhon Sawan	Uthani Thani	Chainat	Lopburi	Saraburi	Singburi	Ang Thong	Suphanburi	Ayuthaya	Pathum Thani	Nakhon Pathom	Nanthaburi	Bangkok	Samut Prakan	Samut Sakhon	Kanchanaburi	Chachoengsao	Total
1. Livestock Number	10 ³																			
Buffalo	10 ³	1	22	13	10	7	4	3	5	17	16	3	2	1	1	0	0	2	1	108
Cattle	10 ³	6	106	21	85	90	15	24	40	143	37	8	39	3	6	1	1	25	3	653
Swine	10 ³	4	36	15	41	43	21	35	33	140	37	15	420	2	7	9	4	4	12	878
Chicken	10 ³	53	1,771	376	544	1,630	677	582	1,721	2,758	3,797	1,133	3,040	73	679	407	172	75	789	20,277
2. Fish Culture																				
No. of Household	10 ³	0.1	2.1	0.7	2.6	1.0	0.6	1.4	3.4	6.0	6.0	2.4	2.3	0.6	0.2	5.7	1.7	0.4	0.1	37.3
Pond Area	10 ³ rai	0.1	4.1	0.4	2.2	2.1	1.3	1.6	4.3	45.5	22.2	9.7	21.8	1.1	3.4	153.0	34.0	0.4	2.1	309.3
Products	ton	83	3,122	123	1,574	1,658	387	410.0	1,342	47,663	4,941	3,876	19,017	8,275	22,891	31,389	10,573	73	507	157,904
Yield	kg/rai	745	761	277	715	809	295	256	312	1,048	222	400	872	7,523	6,733	205	311	178	244	510

Index (%) 60 80 100 120 140 160 180



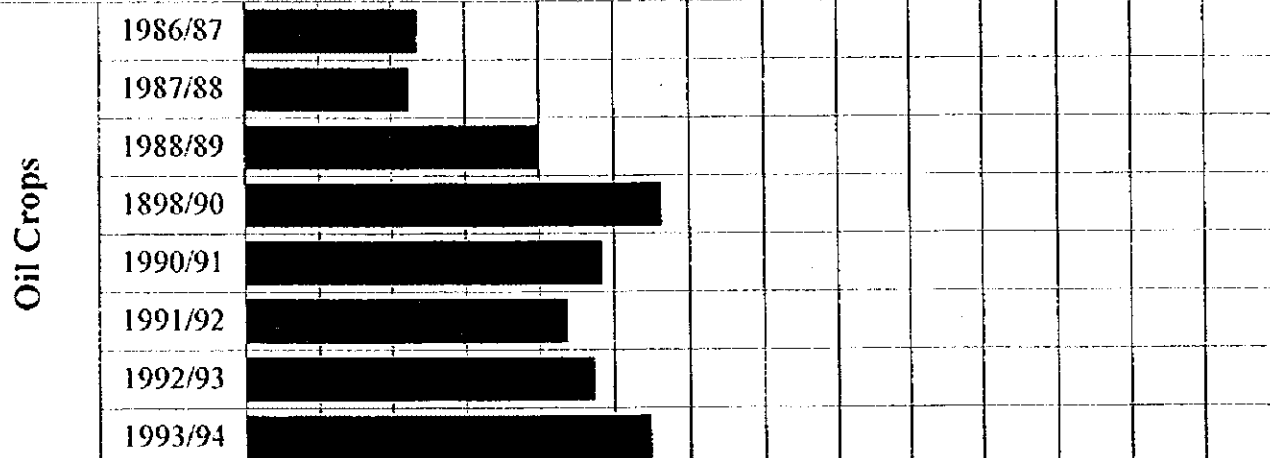
Food Crops = Major Rice, Second Rice, Maize, Cassava, Sugarcane, Mungbean, Sorghum

Index (%) 60 80 100 120 140 160 180



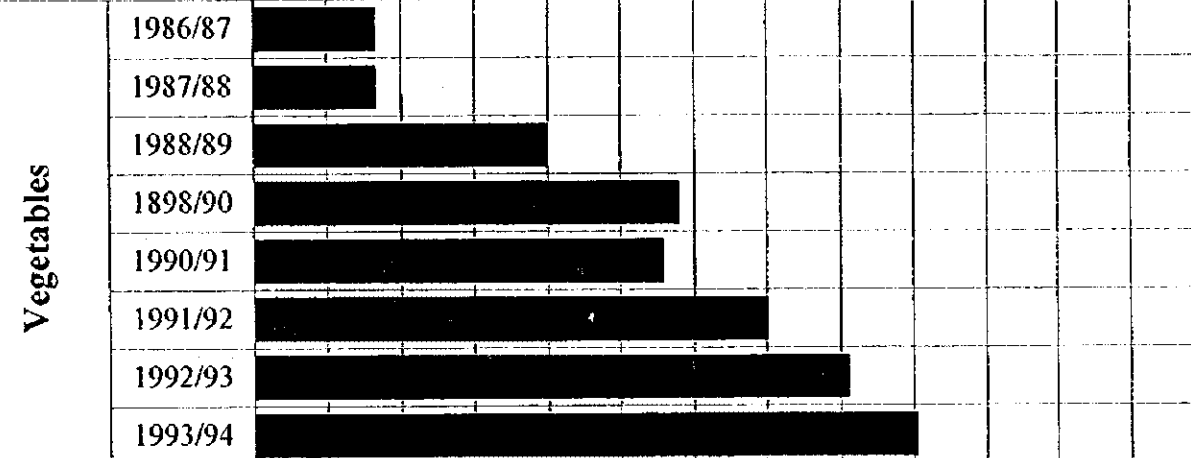
Fruits = Orange, Rambutan, Durian, Mangosteen, Longan, Mango, Pampelo, Pineapple

Index (%) 60 80 100 120 140 160 180



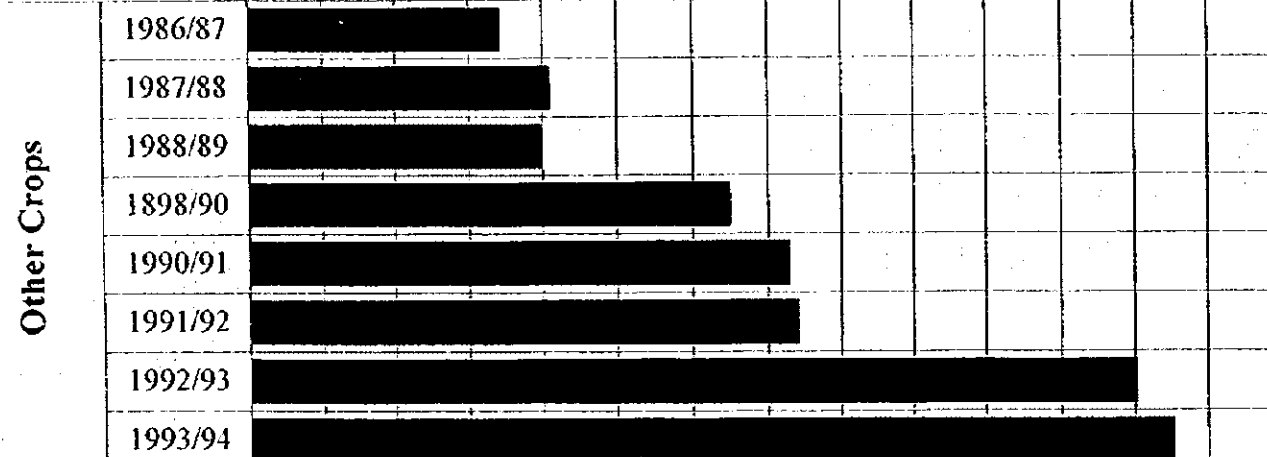
Oil Crops = Soybean, Groundnut, Coconut, Oil Palm, Cashewnut, Sesame

Index (%) 60 80 100 120 140 160 180



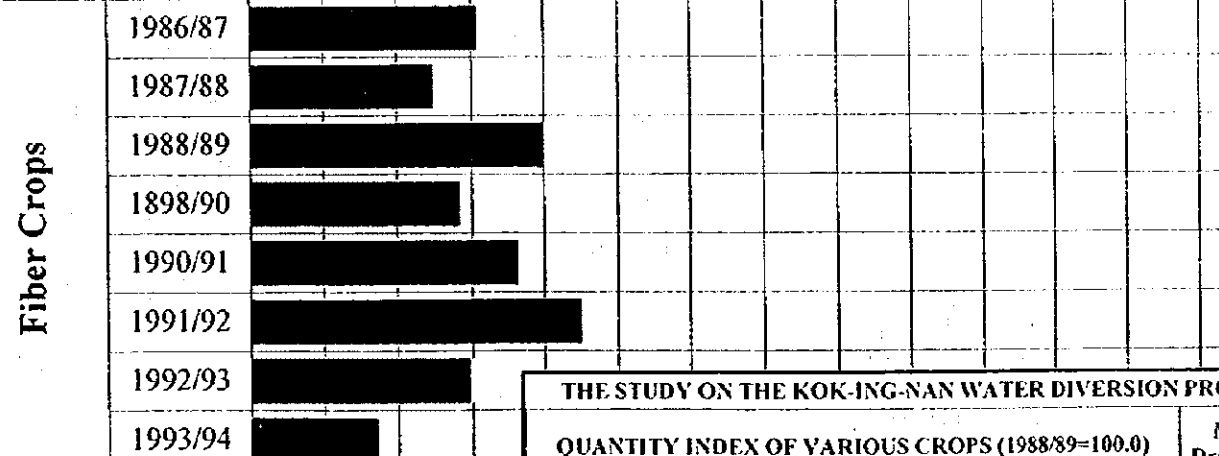
Vegetables = Kale, Cabbage, Chilli, Baby Corn, Cucumber, Ginger, Garlic, Onion, etc.

Index (%) 60 80 100 120 140 160 180



Other Crops = Coffee, Tobacco, Para Rubber

Index (%) 60 80 100 120 140 160 180



Fiber Crops = Cotton, Kenaf, Kapok

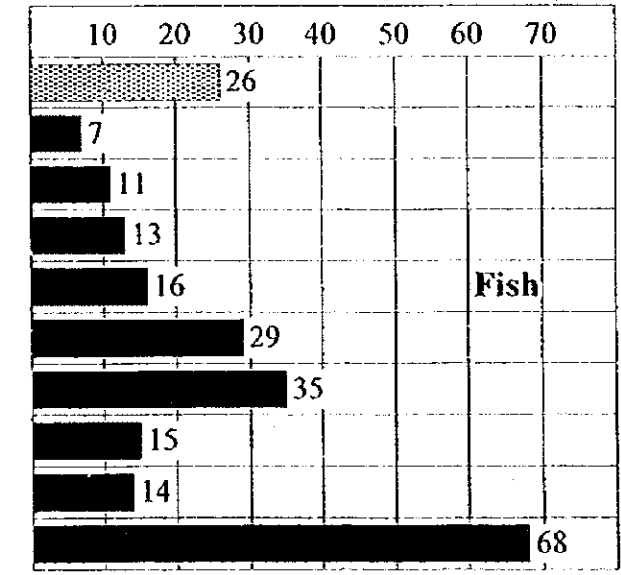
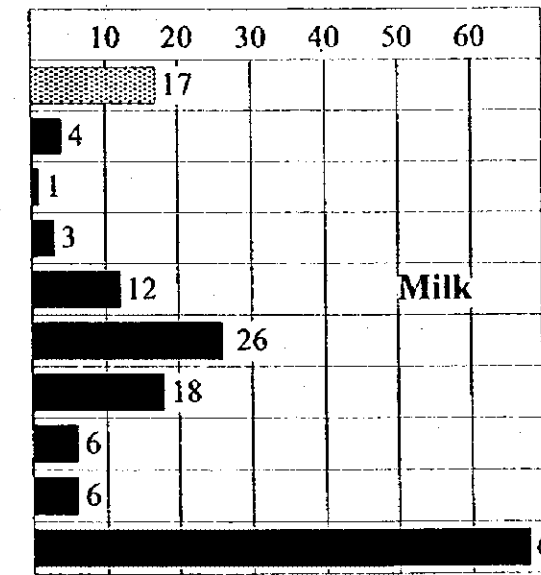
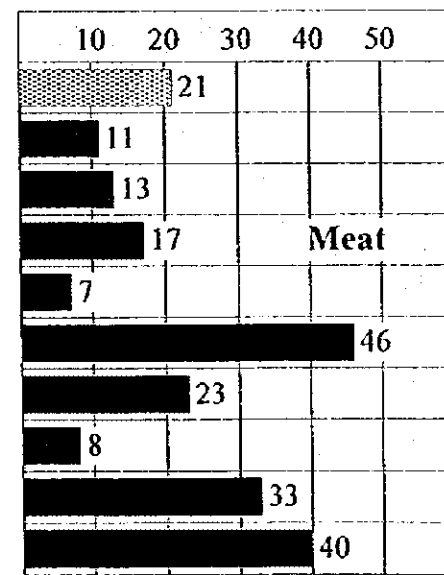
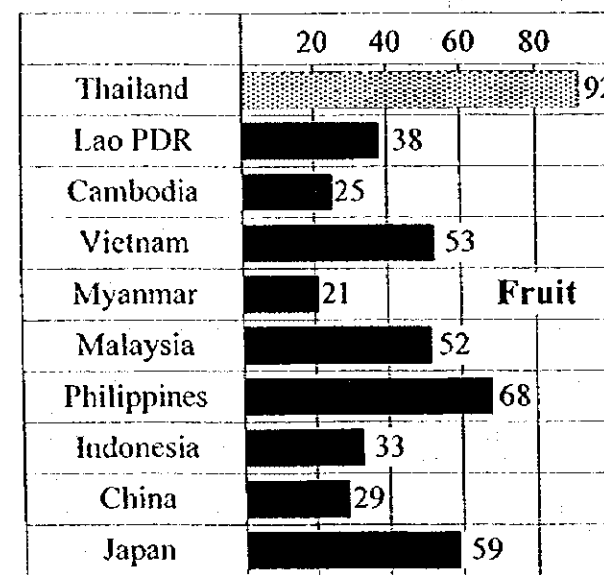
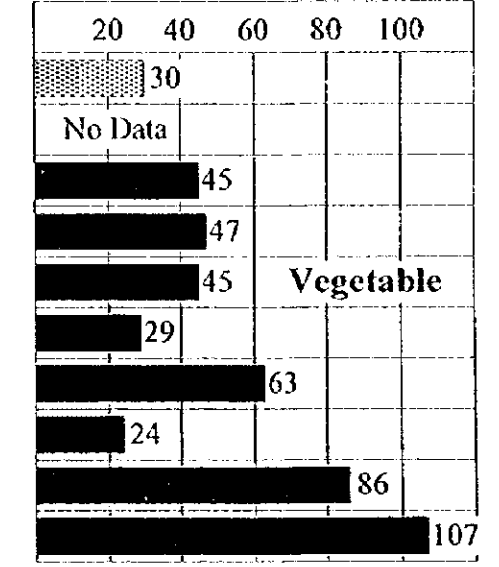
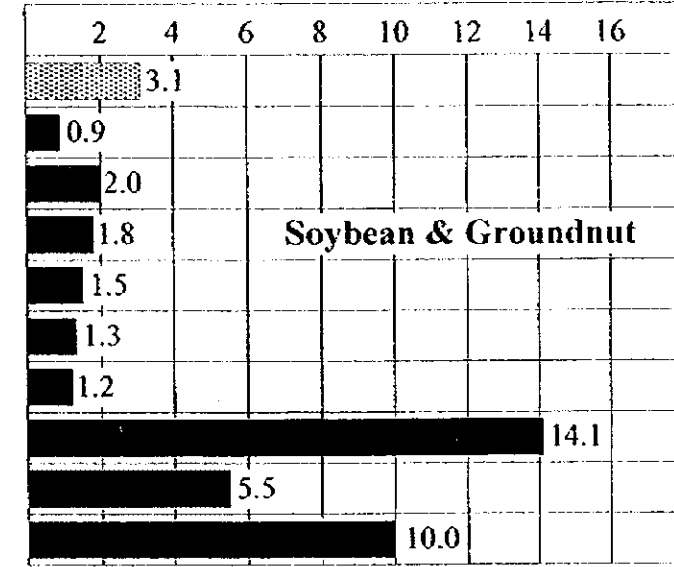
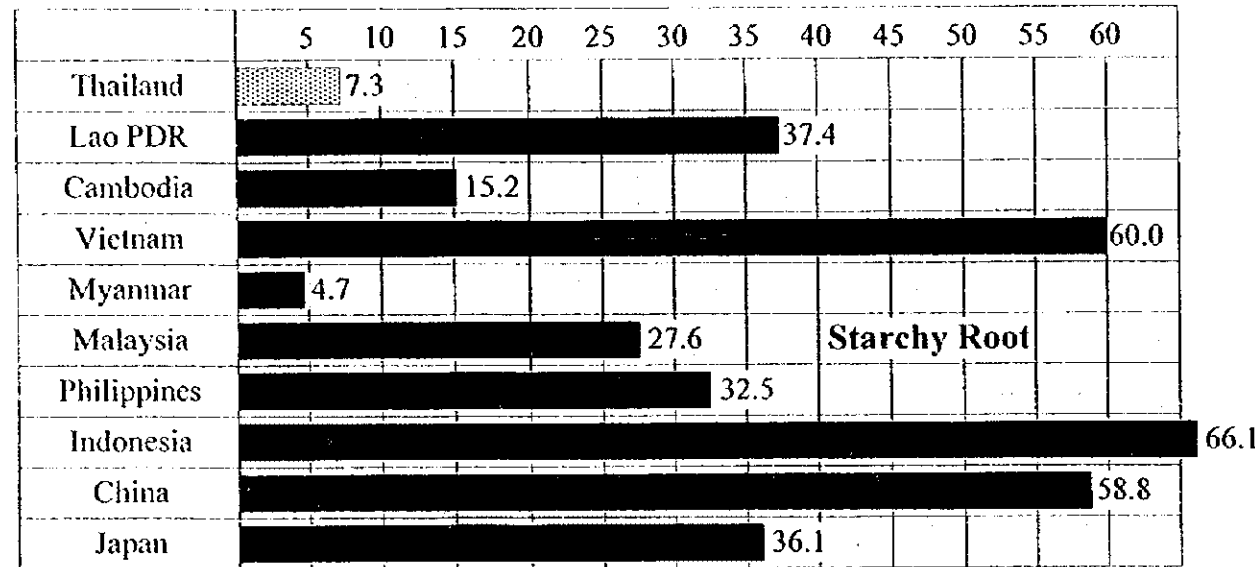
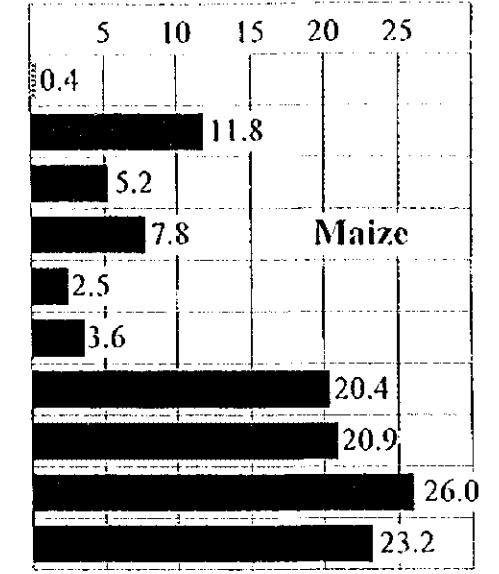
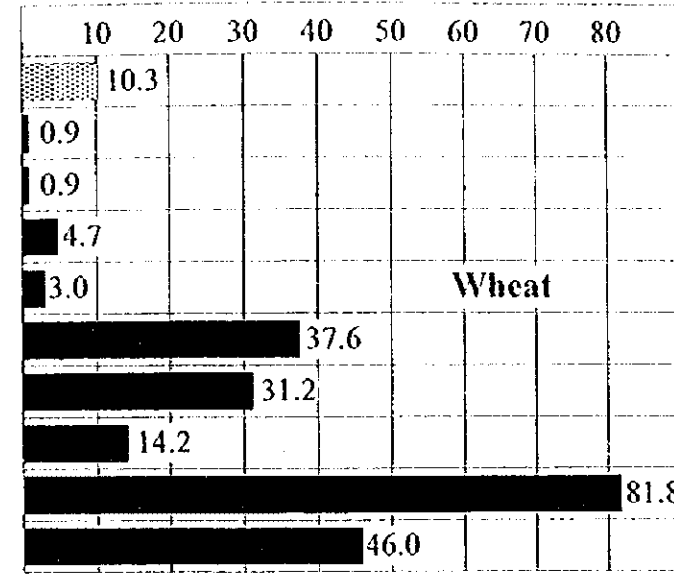
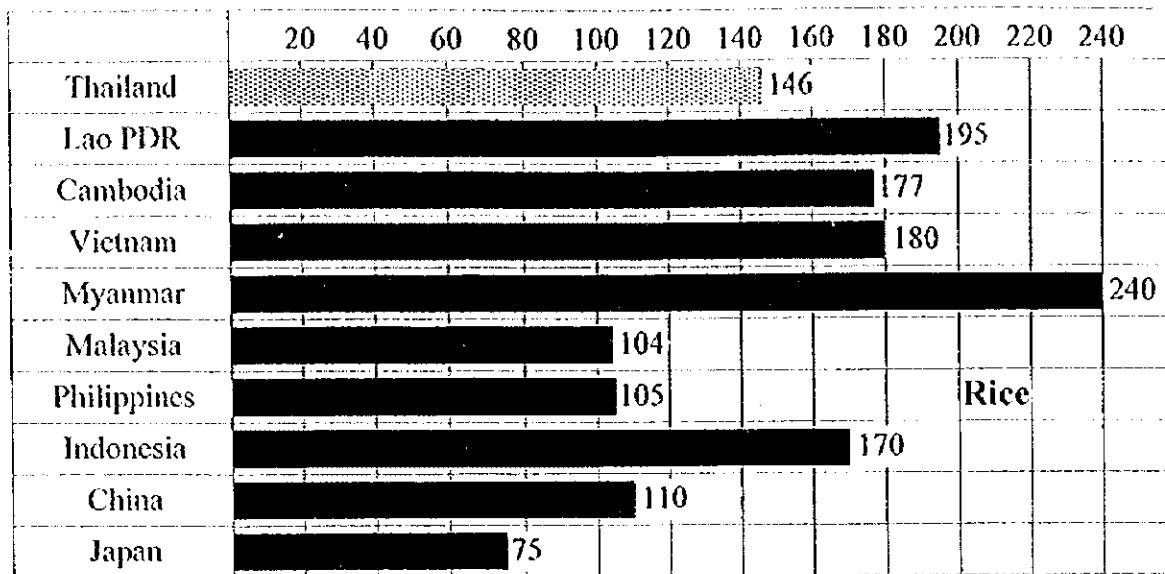
THE STUDY ON THE KOK-ING-NAN WATER DIVERSION PROJECT

QUANTITY INDEX OF VARIOUS CROPS (1988/89=100.0)

Map & Drawing No.

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
SANYU CONSULTANTS INC. & NIPPON KOEI CO., LTD.

II-5



(Unit: Kg/Person/Year)