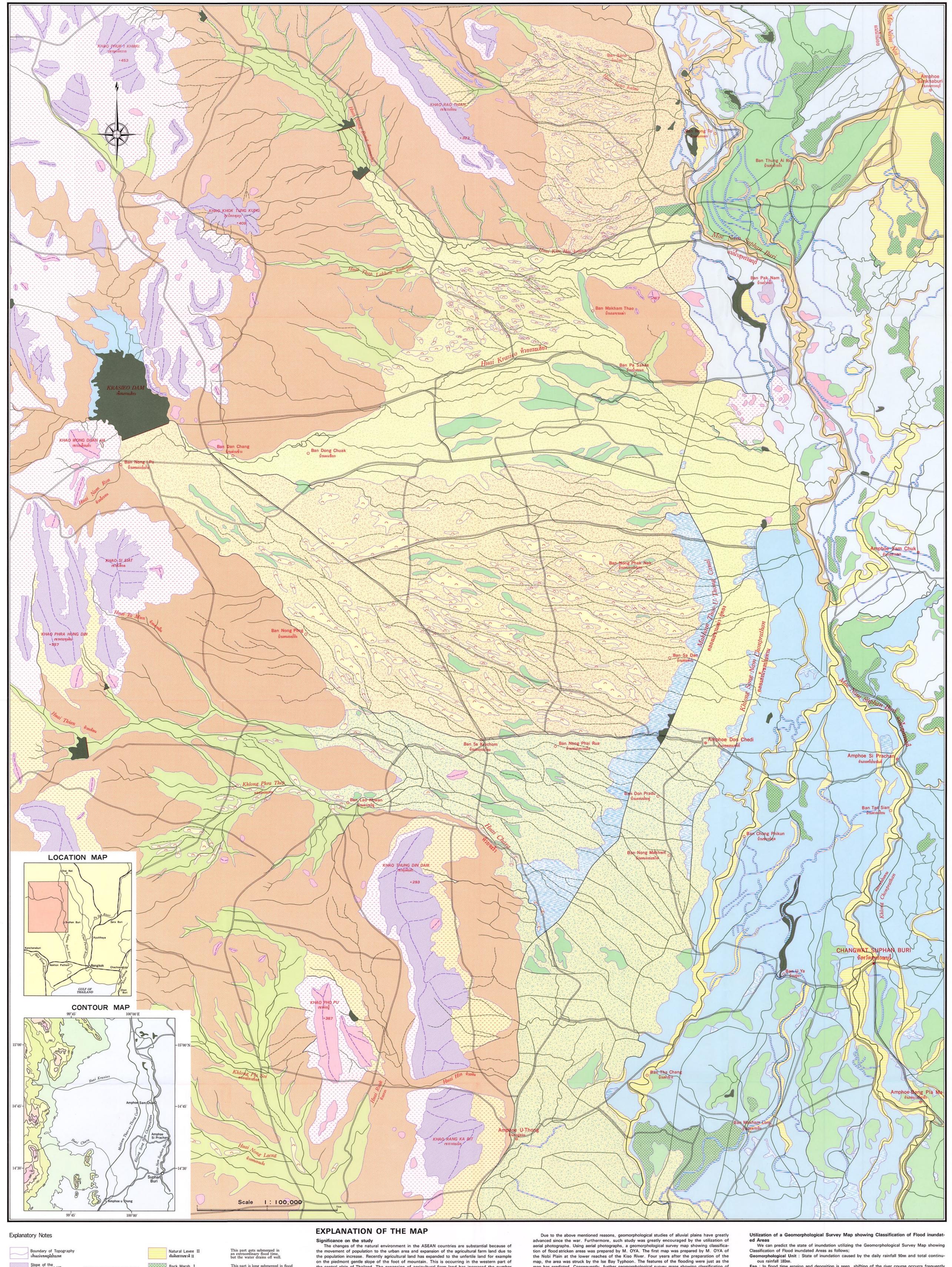
แผนที่สำรวจลักษณะทางธรณีสัณฐานของที่ราบภาคกลางด้านตะวันตกของประเทศไทย แสดงการจำแนกพื้นที่น้ำท่วมถึง



Slope of the Mountain and Hill ความลาคชันของภูเขาและเนินเขา This part is long submerged in flood time. Depth of stagnation is deepest, ที่ลุ่มในเขตน้ำท่วมถึง I Monadnock Back Marsh II ที่กุ่มในเขตน้ำท่วมถึง II This part is long submerged in flood time. Depth of stagnation is deeper. Never submerged in flood time. เขาโดด Back Marsh Located This part is long submerged in flood time, but also swampy in the dry Season. Pediment (Eroded) Never submerged in flood time. ถานเศษหินรอบเขา Alluvial cone This part gets submerged in flood Delta I Never submerged in flood time. เนินตะกอนรูปกรวย ดินดอนสามเหลี่ยม I This part gets submerged in flood Terrace Delta II Never submerged in flood time. ดินคอนสามเหลี่ยม II ลานตะพัก This part gets submerged in an extraordinary flood time, but the water drains off well. The flood water runs through this channel in flood time. Former River Course ลำน้ำเก๋า ที่ราบดินตะกอนรูปพัด II This area gets submerged by sheet Water Rout (Irrigation Canal, Creek, etc.) ที่ราบดินตะกอนรูปพัด III This part gets submerged in an extraordinary flood time, but the water drains off well. Sand Dune Water Surface น้ำผิวดิน Area under water in the dry season. ก กันทราย This part gets submerged in Valley Plain Mountain Ridge an extraordinary flood time, but the water drains off well. This part gets submerged in an extraordinary flood time, but the water drains off well. Natural Levee I

กันดินธรรมชาติ I

the central plain of Thailand. The expansion of agricultural farm land has incl of natural disasters, such as damage from flooding and drought. We want to investigate the mitigation of the natural hazards utilizing a geomorphological survey map which includes classification of flood stricken areas.

The purpose of the Geomorphological Survey Map Showing Classification of Flood inundated Areas The purpose of this Geomorphological Survey Map Showing Classification of Flood - inundated

Areas, is to indicate of the features of the flooding not only in the past but also to predict the The reason is that the topography of the alluvial plain is formed by the reoccurance of flooding. The micro - topography of the plain, such as the alluvial fan, natural levee, back - swamp, delta etc. shows the history of flooding. Therefore if we classify the geomorphology of the plain, we can determine the features of flooding not only in the past but also to predict those of

History of the Geomorphological Survey Map Showing Classification of Flood-inundated Areas After the Second World War, The Japanese Archipelago was frequently devastated by big scale typhoons, especially by the Catherine Typhoon in 1947, when the embankment of the Tone River was broken and the city of Tokyo was devastated. After the 19C, the flood discharge increased continuously in spite of no change in the volume of the precipitation in the upper reaches. This phenomenon occurred because of river conservation and changes of land use. Civil engineers began to reconsider the former river works and planned integrated flood control works for the whole drainage basin. In this case precise geographical knowledge was required. Furthermore, the need for information on the geomorphology of the fluvial plain increased because agricultural engineers designed a greater yield in the production of rice and readjustment

At this time the Japanese geographers were interrested in studying the alluvial plains. Before the war, topographic study was strongly influenced by studies in Europe and United States. Almost all of the studies had been done in the mountainous region formed by erosion. In contrast, the alluvial plains in Japan were formed by deposition, and some geographers wanted to

begin researching the topography of depositional areas.

flood stricken areas were prepared not only in Japan but also in South-East Asia. In 1989, we prepared " A Geomorphological Survey Map of the Central Plain of Thailand Showing Classification of Flood-inundated Areas". The scale of the map is 1/250000. This time we have prepared " A Geomorphological Survey Map of the Kraseio River Basin in the Western Part of the Central Plain of Thailand Showing Classification of Flood - inundated Areas " which scale is 1/100000. One of the purpose of the preparation is development of the interpretation of landsat

Geomorphology of the Kraseio River Basin

The Kraseio River Basin consists of the following geomorphological elements; pediments, inselbergs, terraces, fans, vally plains, small natural levees, back-swamps, former river courses etc. Pediments are well developed at the foot of the mountains. The area is formed by erosion, and this erosion is still continuing. In former days the area wasn't used because the soil layer was thin, and water supply was not easily accessible. But recently, the area has been changed to the upland crop fields growing, for example corn and vegetables etc. Sometimes the area suf-

days the area wasn't used as agricultural farm land, but recently the area is being used as upland crop fields for corn etc. Fan is divided into fan I, fan II and fan III. Fan I was formed during the Pleistocene age, fan II was formed by the mud flow, and fan III has been formed recently. The grain size of the fan is small and slope of the fan is gentle compared with fan in Japan. From the lower edge of the fan to the Suphan Buri River, natural levees and deltas are developed. The city of Suphan Buri is located on a natural levee.

Some of the valley plain was buried by mud flow. Terraces are covered by laterite. In former

Flood damage in 1988

In June, September and October of 1988, the central plain of Thailand, especially the basin of the Suphan Buri, was devastated by the flooding. Annual rainfall at Suphan Buri in 1988 was 1192mm, and the maximum daily rainfall was 103mm in June. Flooding occurred in the lower edge of the fan. The velocity of the flood current was fast, flood water flowed down as sheet flood. Deposition was noted in the paddy field located at the back - swamps. The period of inundation

was long because roads and waterways blocked the flood current.

Fan: In flood time erosion and deposition is seen, shifting of the river course occurrs frequently but the water drains off well. Fan I: Flood water flows down as sheet flood, erosion is seen in the upper reaches, and deposition in the lower reaches. At the lower edge of the fan, ground water is seen. If a road is constructed on the outside of the fan, inundation will be seen between the fan and road. Depth of the inundation is 40 to 70cm.

Fan II: This fan is formed by the mud flow inside the valley plain. The cross - section shows that the central part of plain is higher than that of the both side of the valley. Fan III: Flood water flows down as sheet flood, erosion is seen in the upper reaches, and deposition, lower reaches. If a road were at the outside of the fan, the inundation would be

seen between fan and road. The velocity of the flood current is faster than that of fan I. Natural Levee : When the area is submerged, the water drains off well . Back-swamp: When the area is submerged, the period of inundation is long, sometimes 2 or 3 months. The state of inundation will be changed by artificial construction works. Abandoned River Course: In flood time flood water runs through the course. The depth of the ground water is shallow, when making and embankment careful attention must be filtration of the ground water.

Pediment: In flood time, the slope will be eroded. National Research Institute for Earth Science and Disaster Prevention,

Science and Technology Agency, Japan Researched and Cartographed by;

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March, 1991 Printed by KOKUDO CHIZU, LTD.