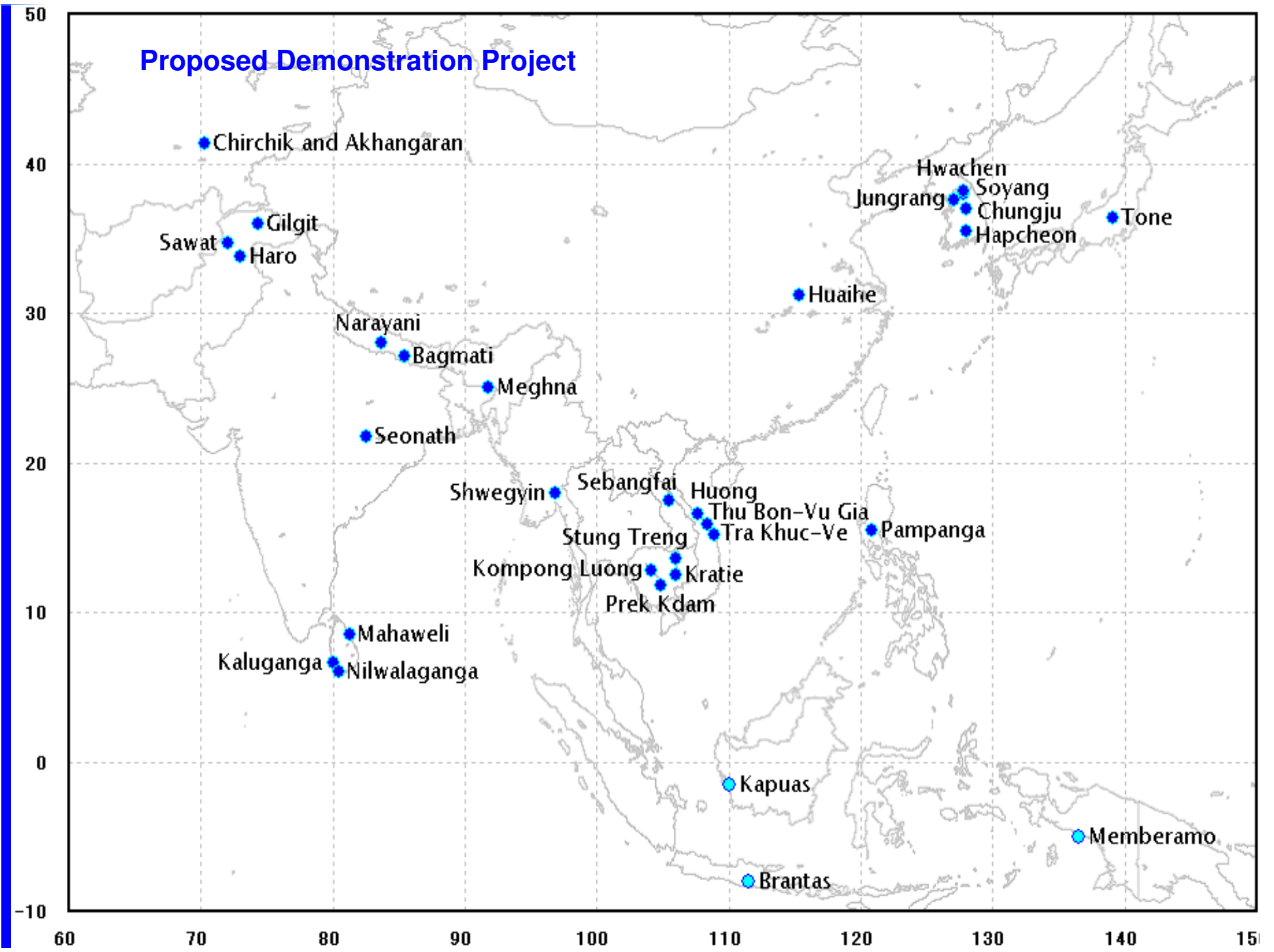


# Proposed Demonstration Project



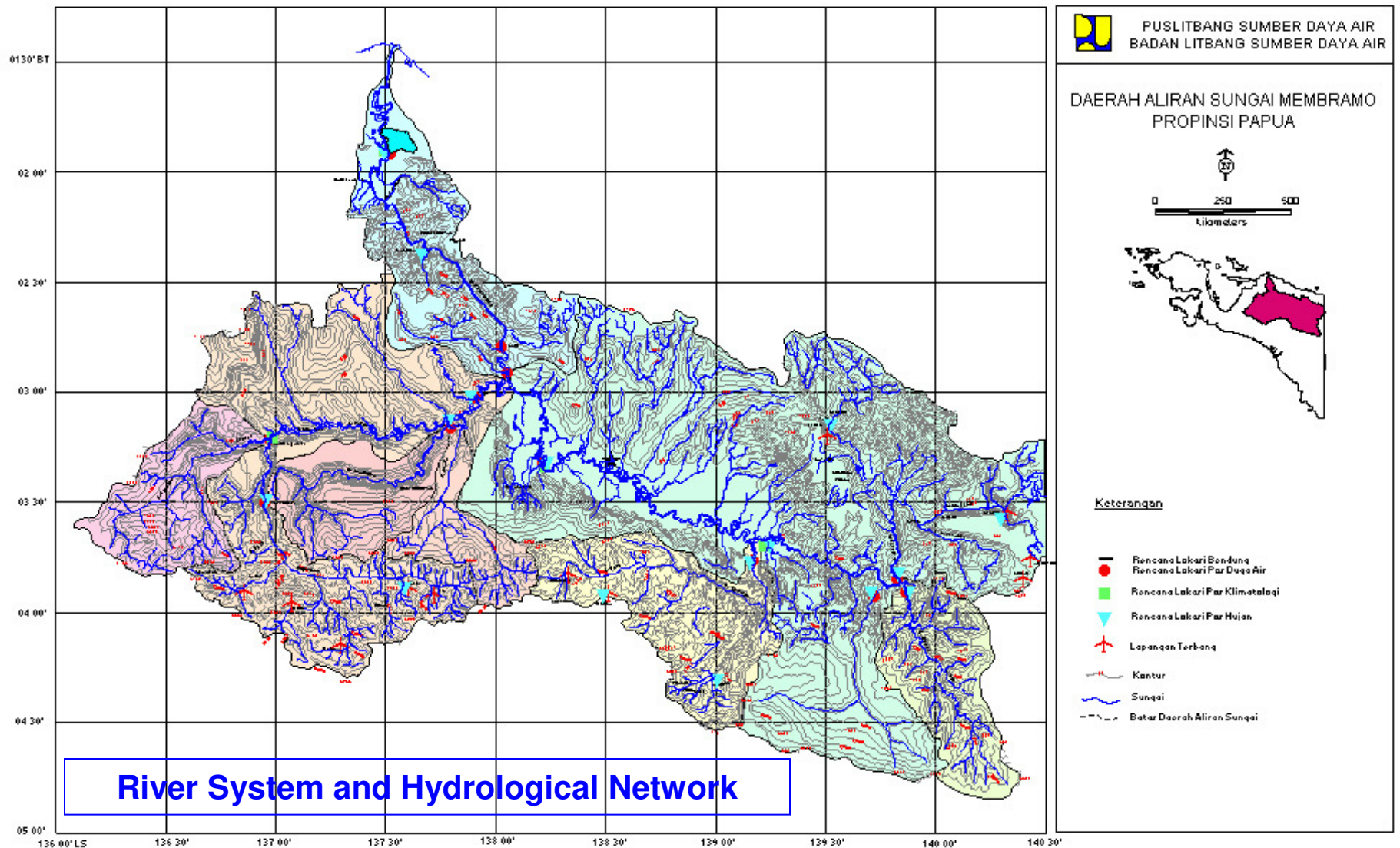


Gambar 1. Lokasi Studi

## **OBJECTIVES:**

- ❑ To set up Rainfall Runoff Relation for Prediction Un-gauged Basin**
- ❑ To improve the predictive capability for key water cycle variables and feedbacks through improved parameterization to better represent hydro-meteorological processes.**

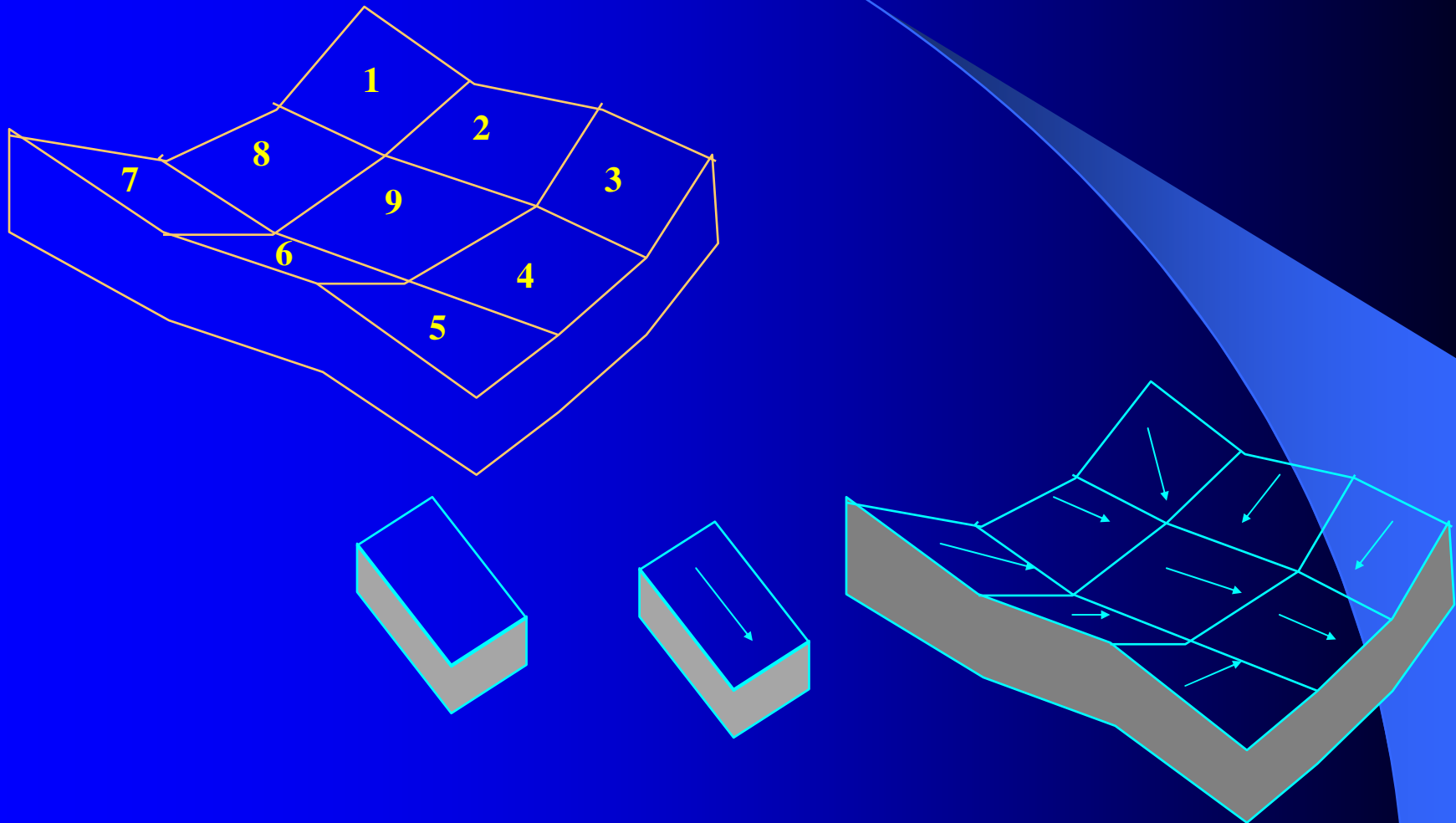
# Digitital Elevation Model for Flood Analysis



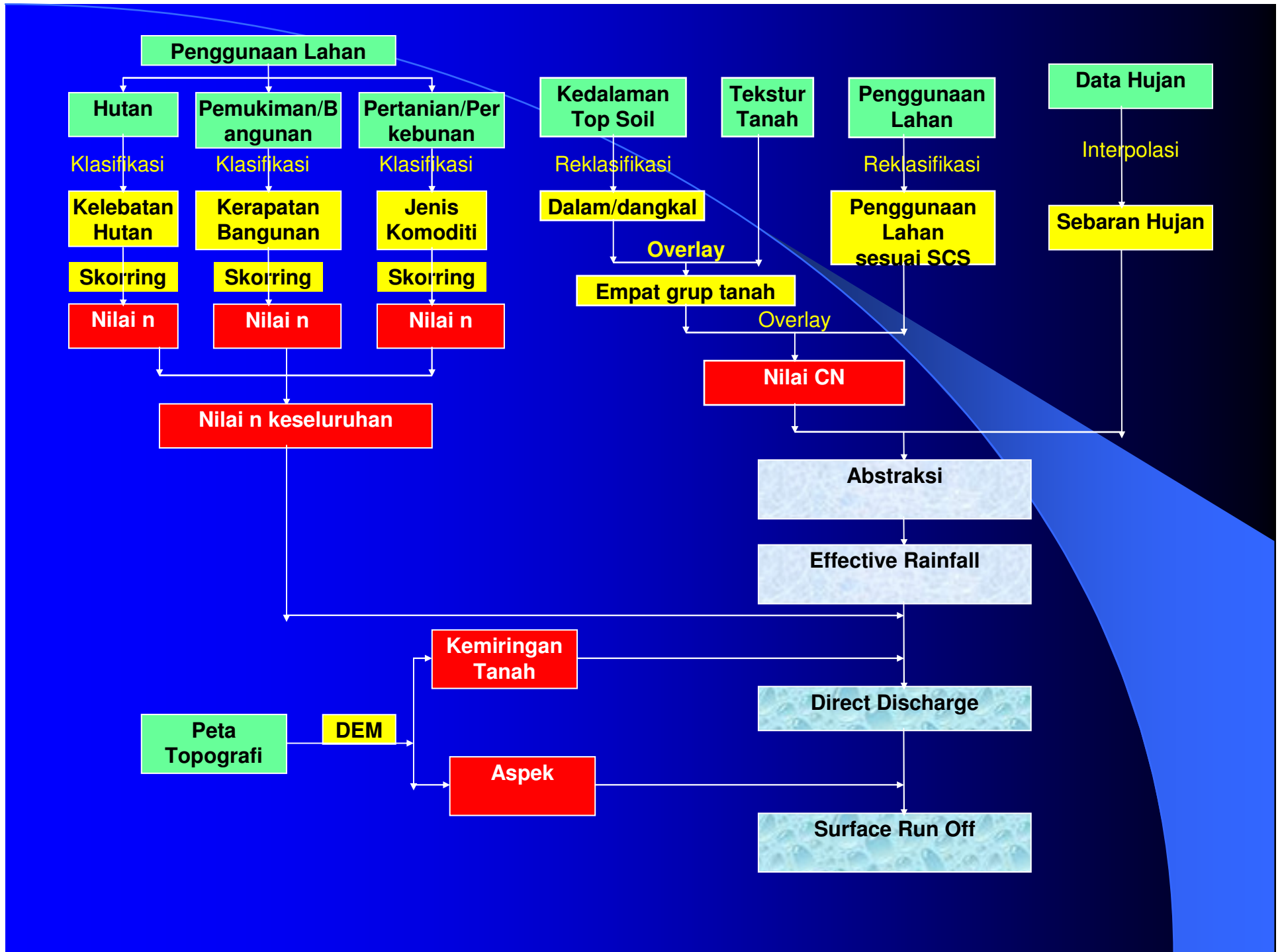
# DATA REQUIREMENT

No	Nama Data	Jenis Data	Instansi	Keterangan
1	DEM	Peta ; Skala 1:25000	Bakosurtanal	
2	Breakline	Peta; Skala 1:25000	Bakosurtanal	
3	Landuse (Lama, existing, rencana)	Peta;Skala 1:25000	Pemda Kab.Semarang	
4	Soil / Tanah	Peta; Skala 1:25000	Pemda	
5	Hidrogeologi	Peta;Skala 1:25000	Hidrogeologi/Dep. Tambang	
6	Jaringan Jalan dan Kota-kota (Kec., Kab. Dan Prop.)	Peta; Skala 1:25000	Bakosurtanal	
7	Batas Administrasi (Kec., Kab., Prop.)	Peta; Skala 1:25000	Bakosurtanal	
8	Jaringan Sungai	Peta; Skla 1:25000	Bakosurtanal	
9	Waduk, Danau, Bendung dan tampungan lainnya	Peta;Skala 1:25000	Bakosurtanal/PDSA	
10	Genangan Banjir	Peta; Skala 1:25000	PDSA	
11	Titik Pepompaan Air Tanah	Peta; Skala 1:25000	P2AT/PDAM/Pemda	
12	Hujan, Debit, Iklim	Peta & Angka	BMG, PDSA, PLN, dll	
13	Demografi (Umur, Jenis Kelamin, Tingkat Pendapatan dll.)	Peta & Angka	Pemda	
14	Aktivitas Ekonomi (Industri, Hotel, dll)	Peta & Angka	Dinas Industri	

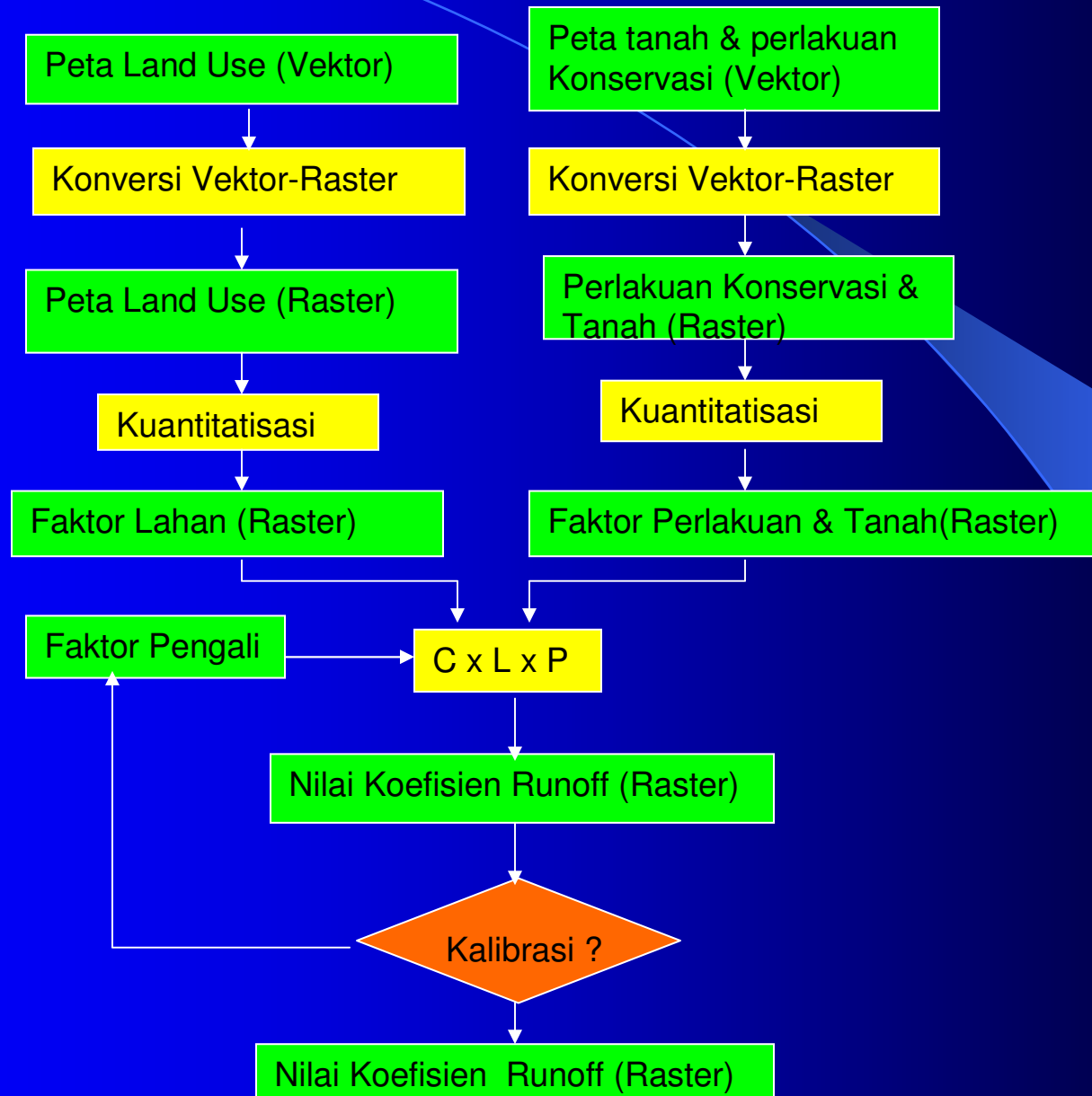
# GRID SYSTEM FOR FLOW DIRECTION





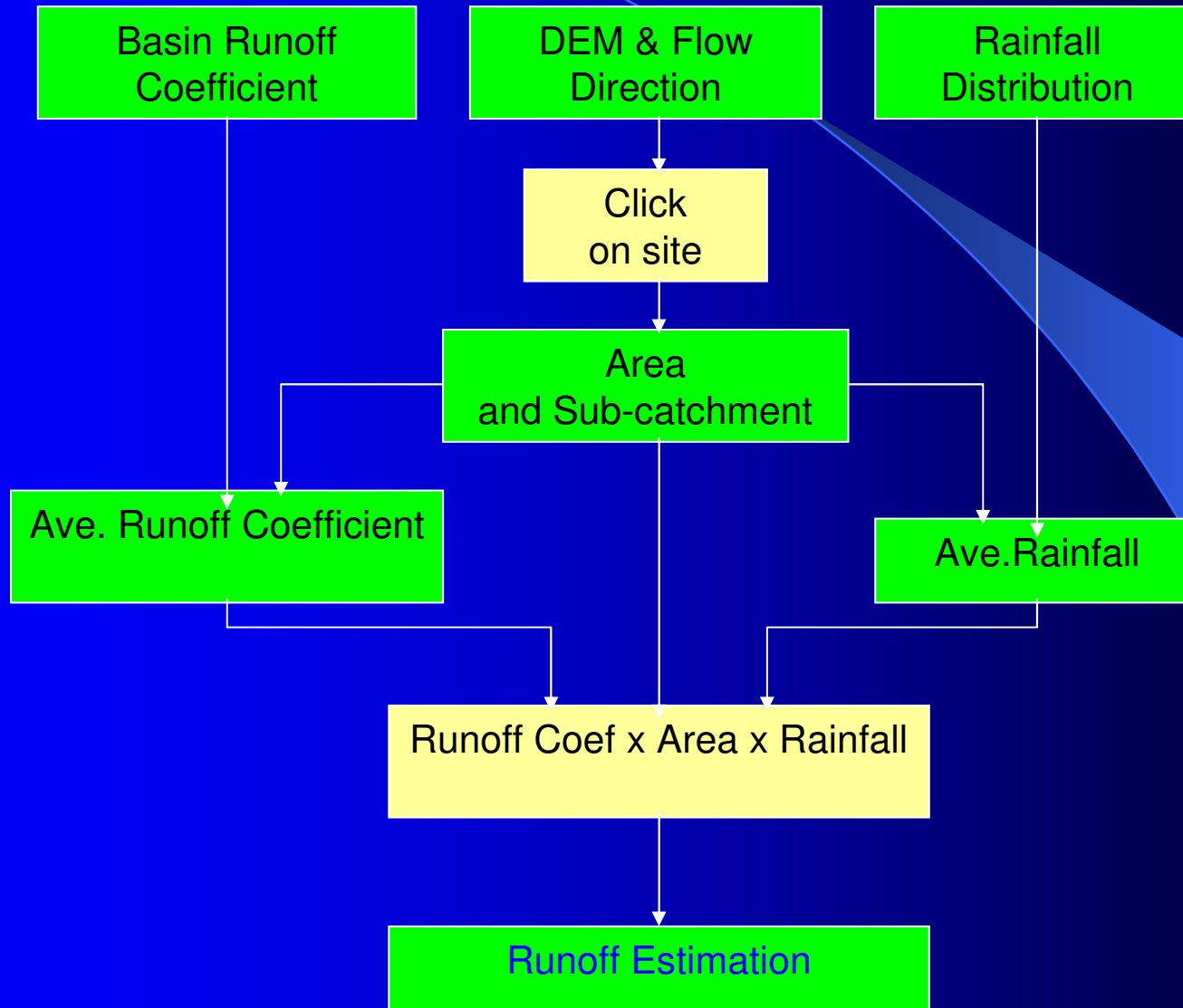


# FLOW CHART FOR DETERMINATION OF RUN OFF COEFFICIEN

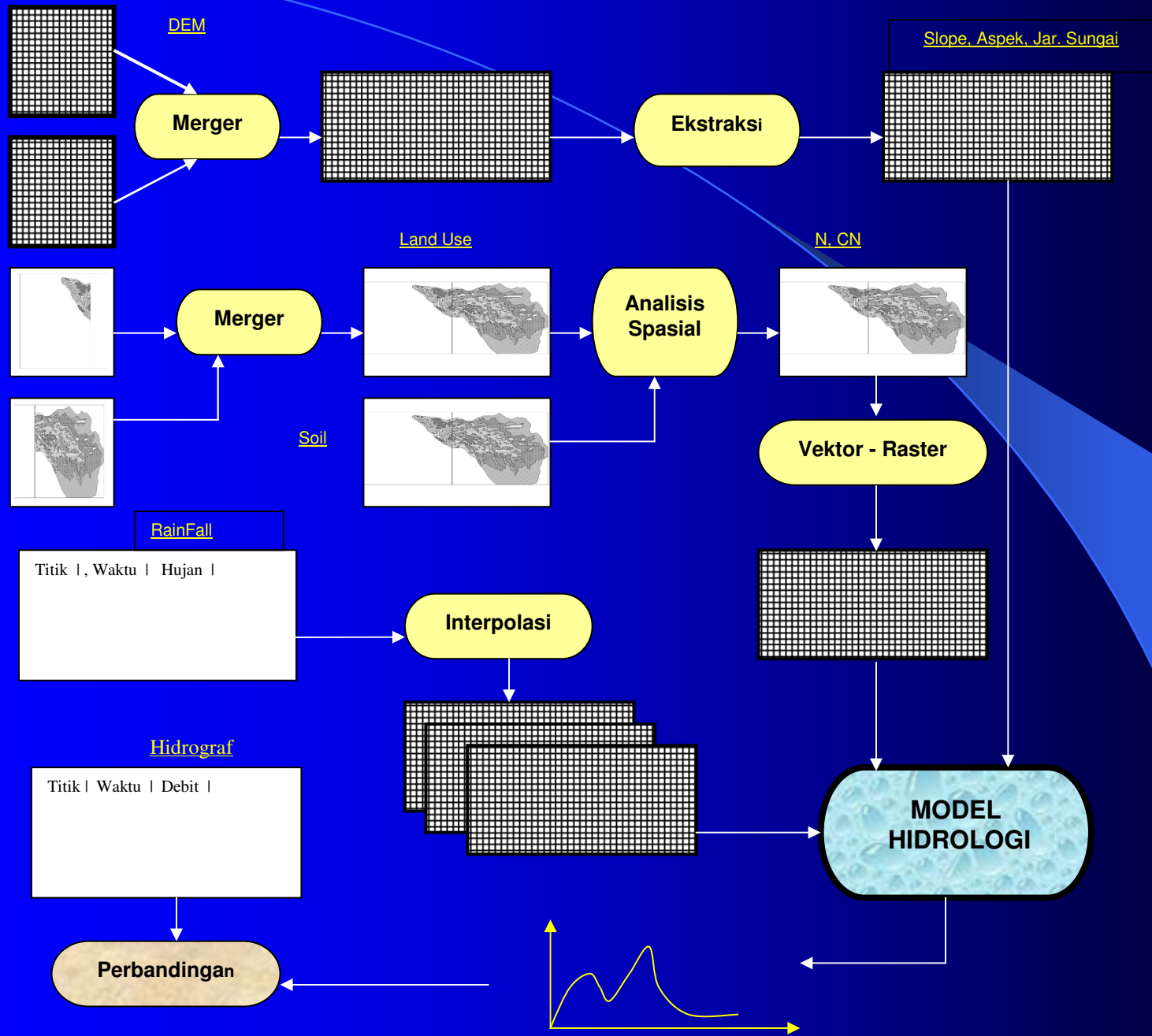


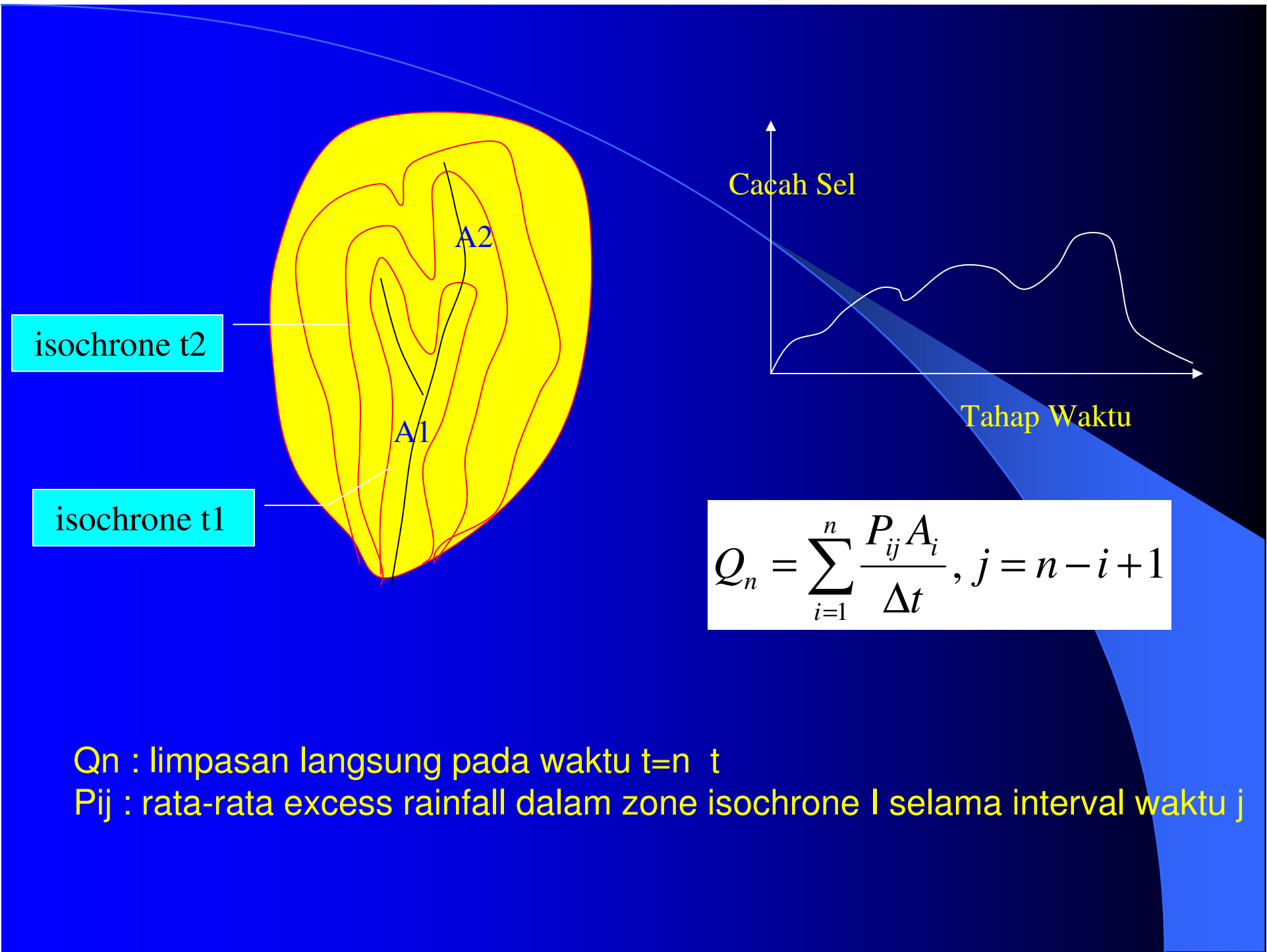


# RUNOFF ESTIMATION









isochrone t2

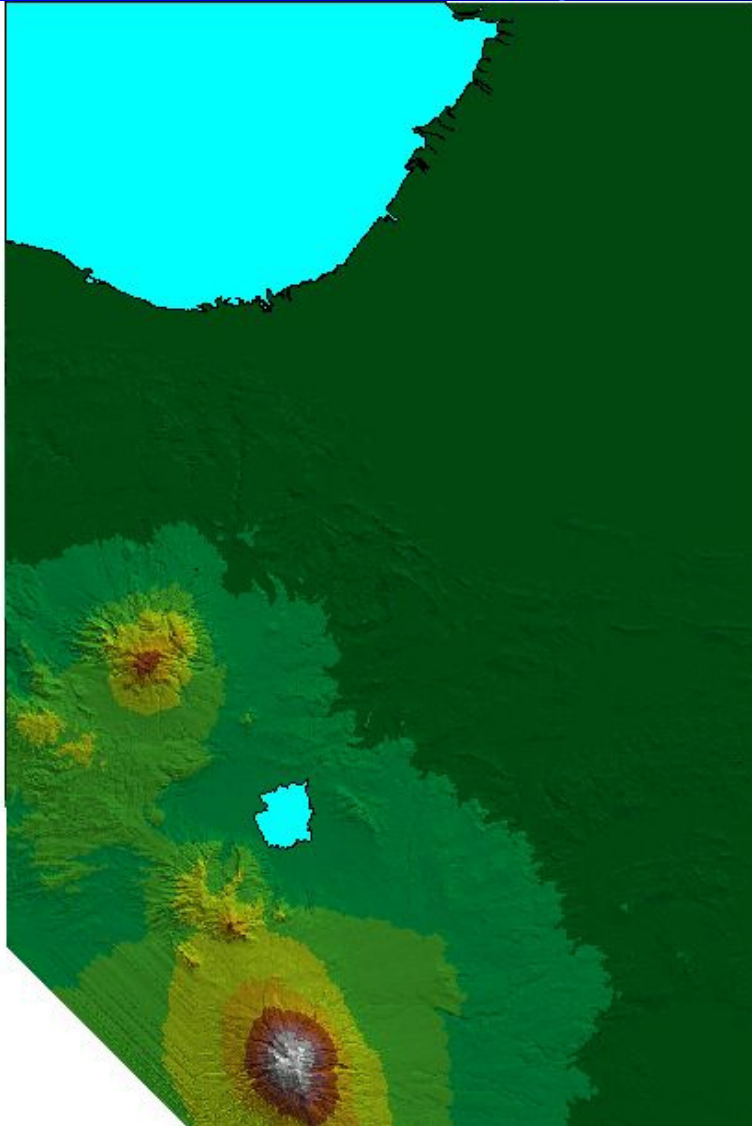
isochrone t1

$$Q_n = \sum_{i=1}^n \frac{P_{ij} A_i}{\Delta t}, j = n - i + 1$$

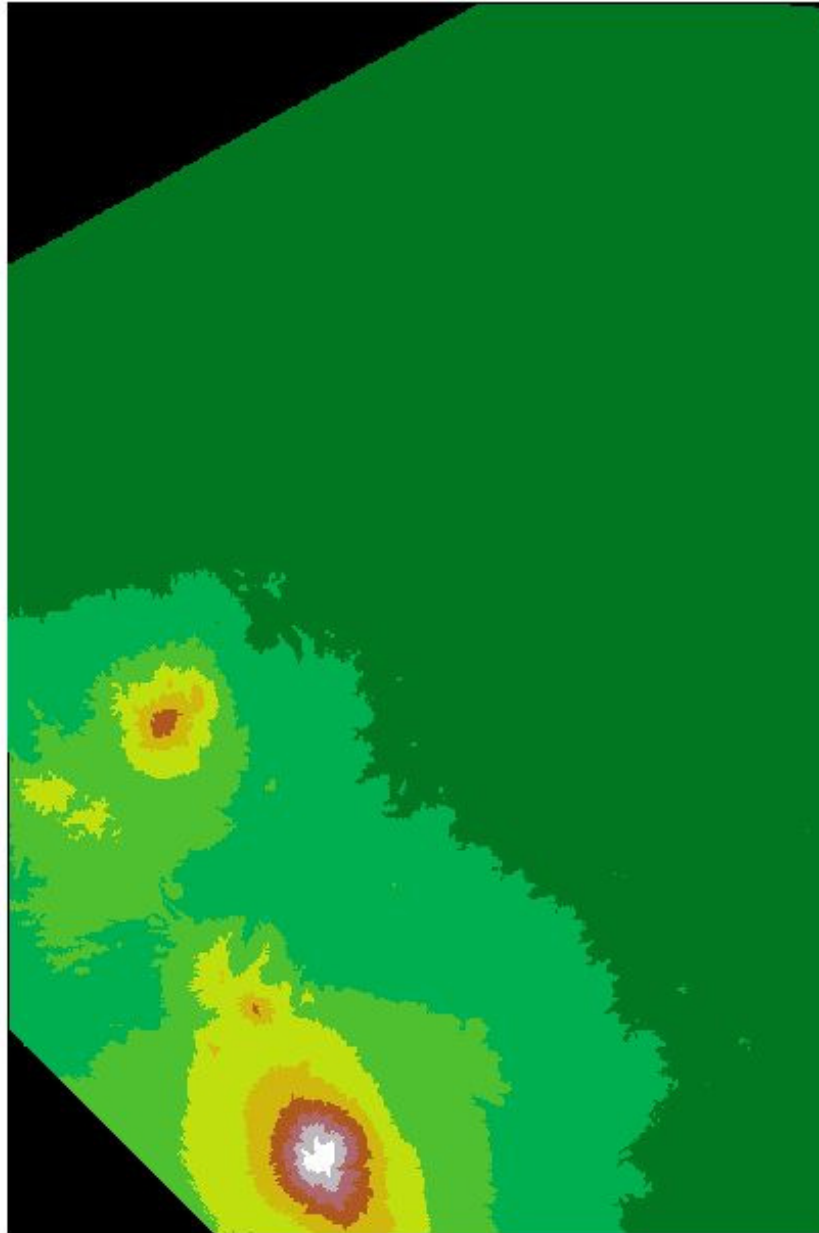
$Q_n$  : limpasan langsung pada waktu  $t=n$  t

$P_{ij}$  : rata-rata excess rainfall dalam zone isochrone I selama interval waktu j

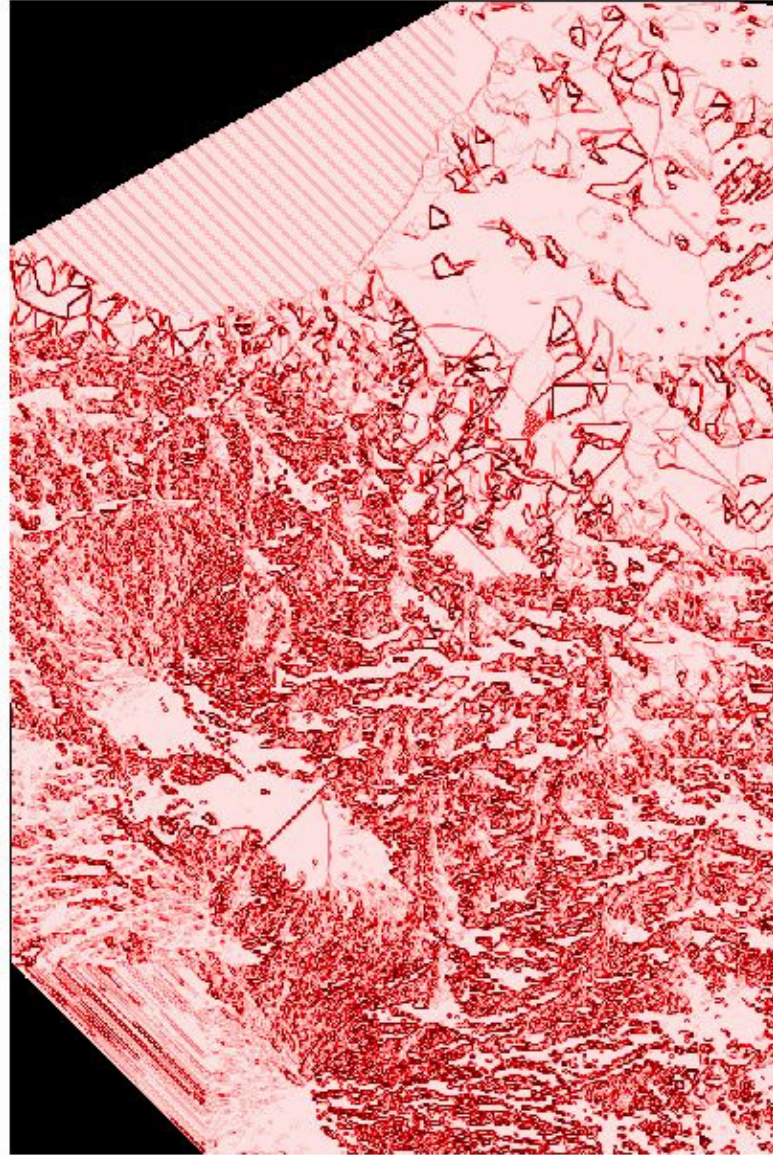
# DEM River System



# Grid Elevation

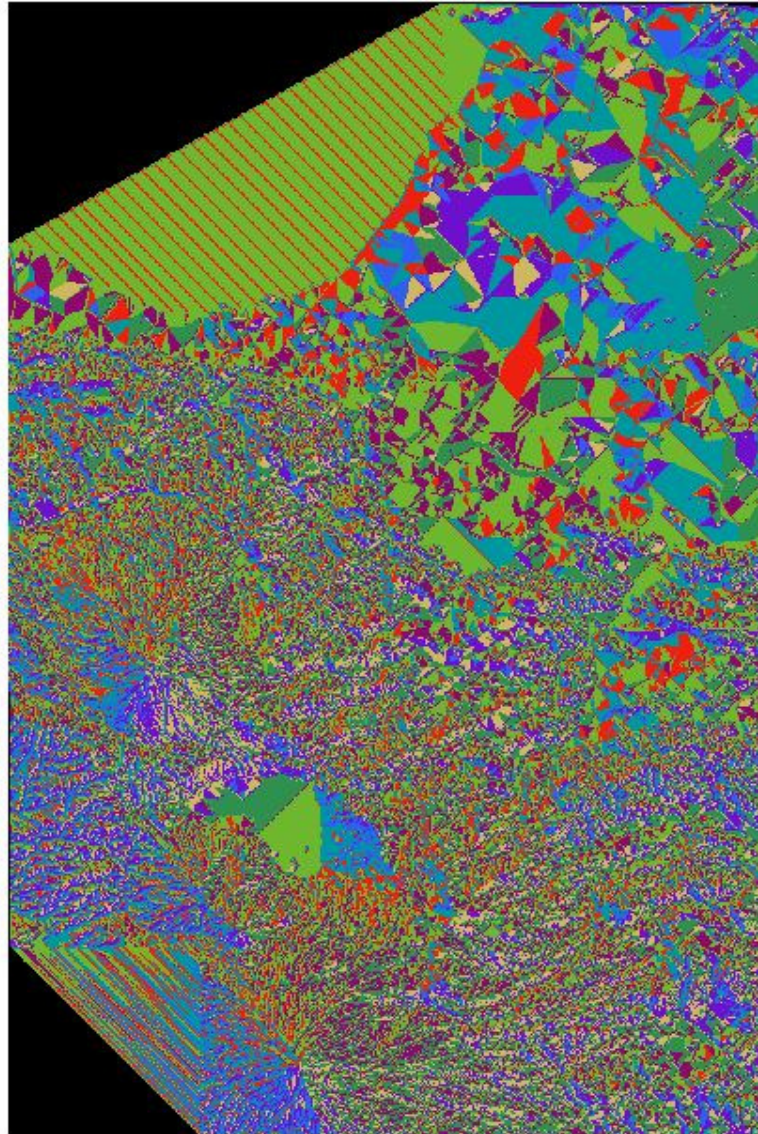


# Grid Slope



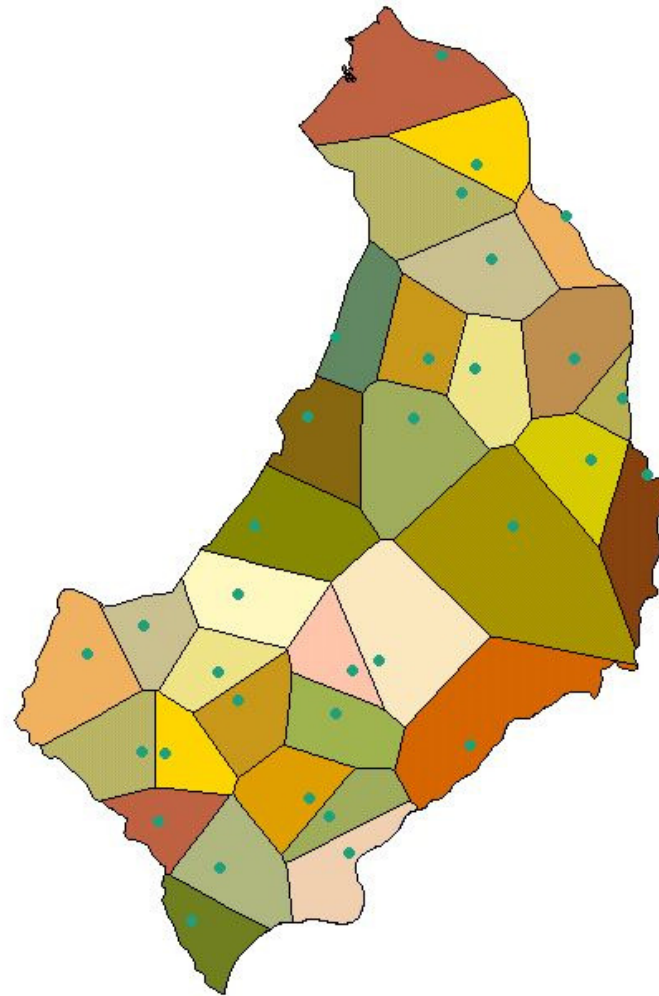


# Grid Flow Direction

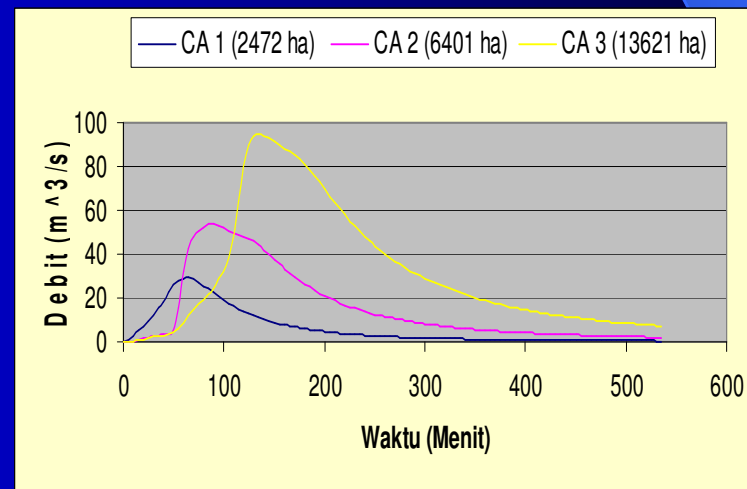
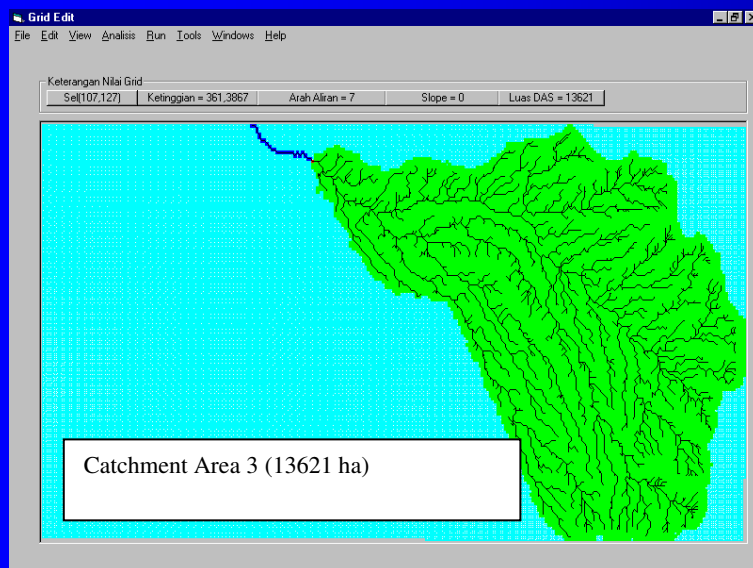
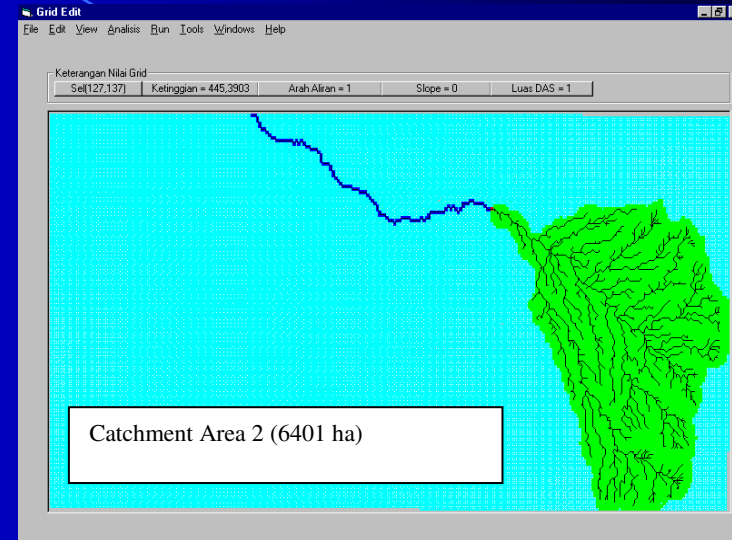
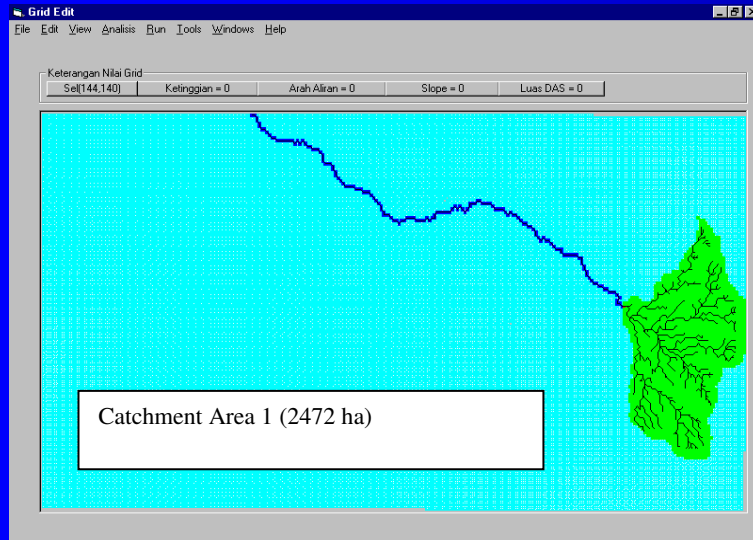


# Rainfall Distribution

## Theissen poligon



# Rainfall –Run off Relation



**Thank you**

**for your kind attention**