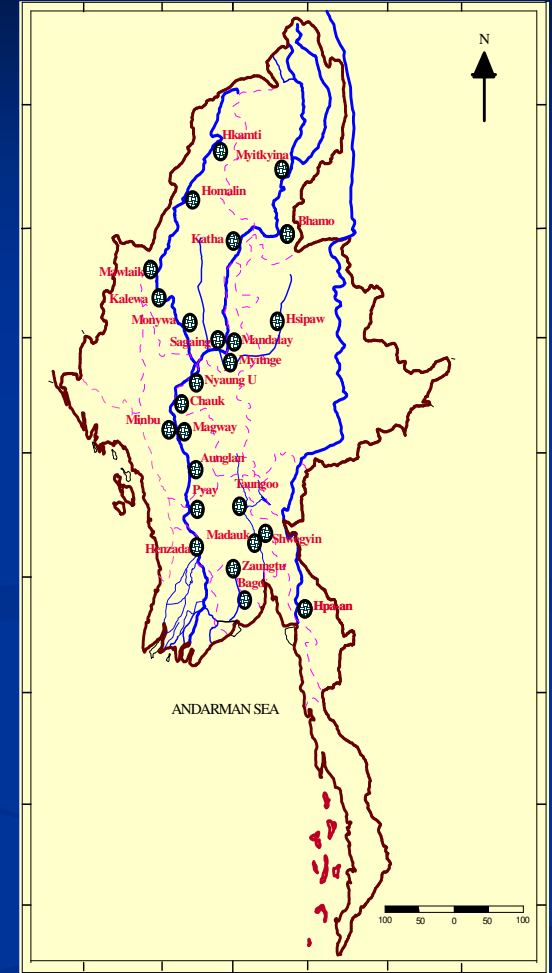
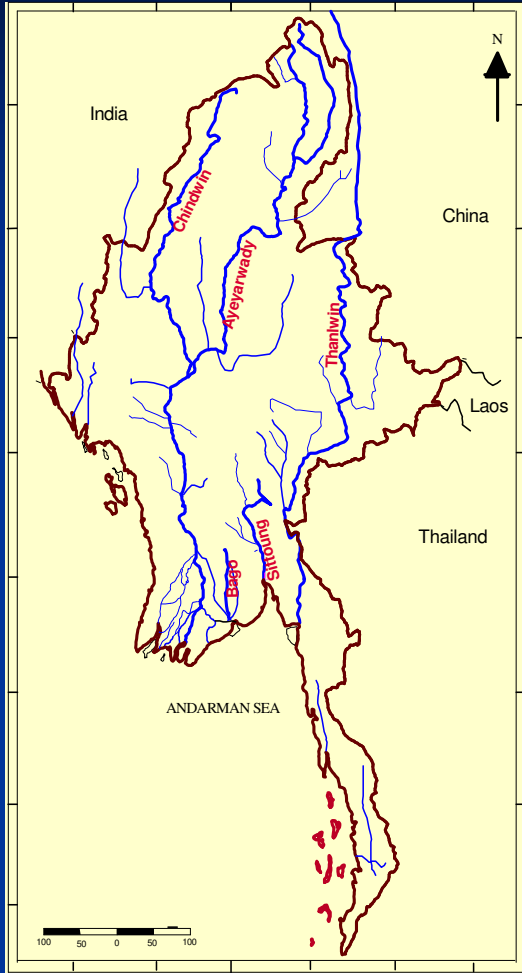
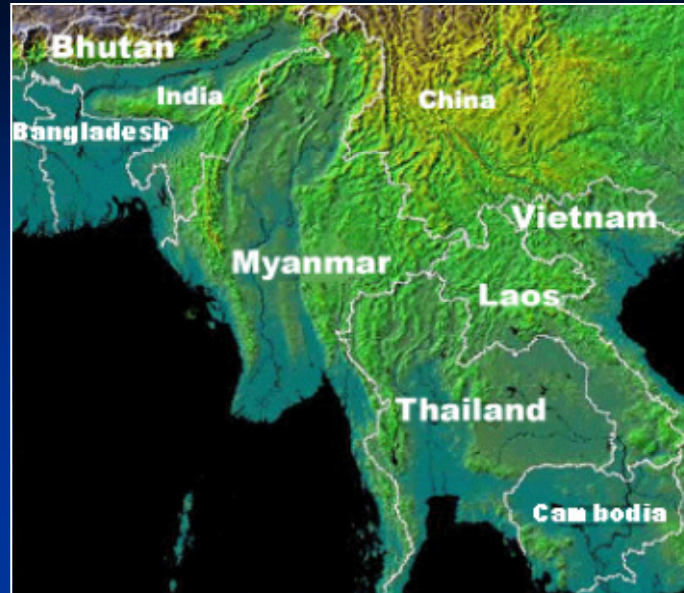


The Asian Water Cycle Initiative (AWCI)
International Coordination Group (ICG) Working Session

Htay Htay Than
Dept. of Meteorology & Hydrology
Myanmar

Bali, Indonesia

9 September
2007

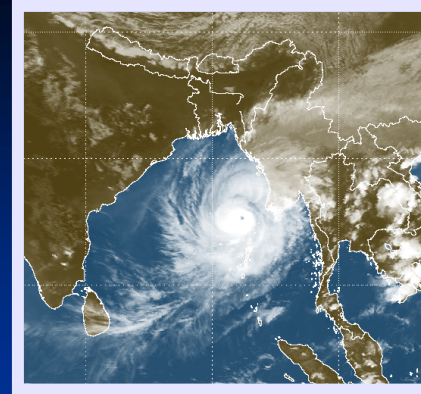


Rivers in Myanmar

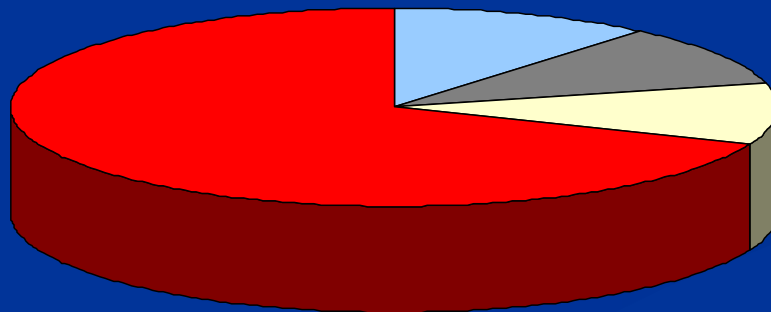
River forecasting stations in Myanmar

DISASTERS IN MYANMAR

- Flood (Moderate)
- Storm (Moderate)
- Earthquake (Rare)
- Landslide (Rare)
- Urban Fire (Moderate)



PERCENTAGE OF DISASTER OUTBREAK IN MYANMAR (1996-97 to 2005-06)



Flood 11%

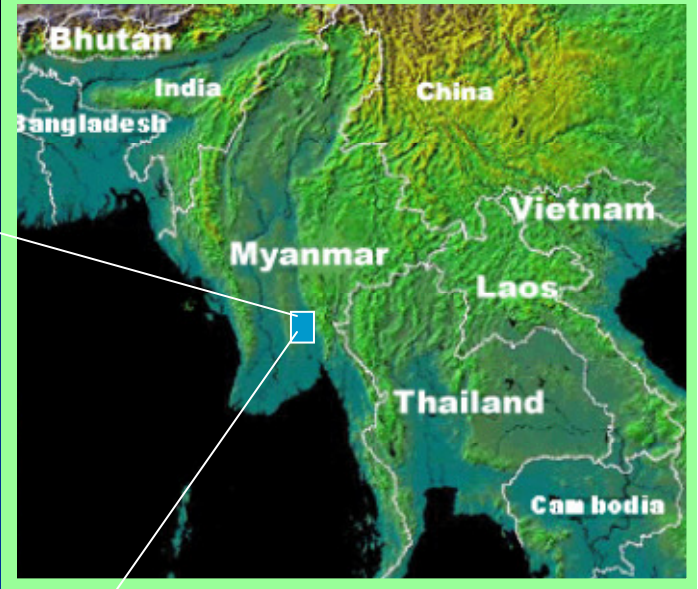
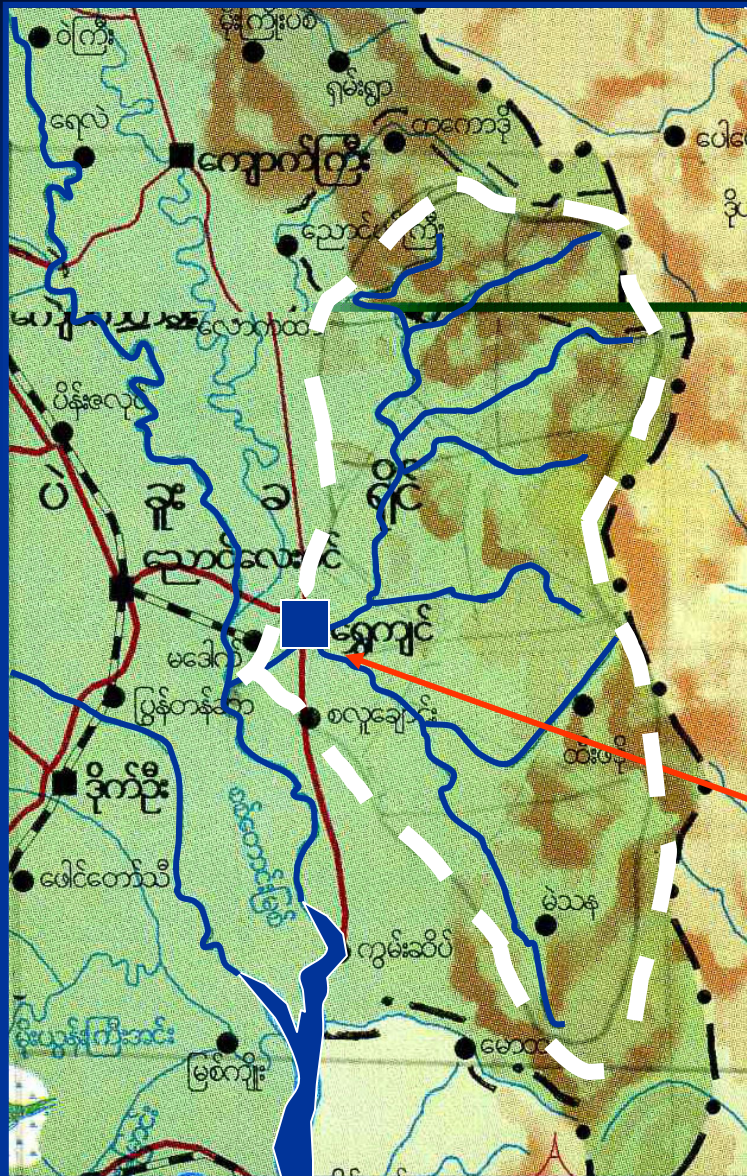
Storm 10%

Other 10%

Fire 69%

River Basin Description

- ✓ Location : $17^{\circ} 30'$ to $18^{\circ} 30'$ (North latitude)
 $96^{\circ} 45'$ to $97^{\circ} 10'$ (East Longitude)
- ✓ Catchment outlet: $17^{\circ} 48'$ (N. Lat) , $96^{\circ} 48'$ (E. Long)
- ✓ Catchment Area : 1747 km²
- ✓ MOLTS Point 1 : $17^{\circ} 52'$, $96^{\circ} 5'$
- ✓ MOLTS Pt. 1 elⁿ : 9 m (above mean sea level)



Location of Shwegyin Station

North latitude : 17° 30' to 18° 30'
East Longitude : 96° 45' to 97° 10'

Objectives

- To install two telemetering stations and one receiving station in Shwegyin river basin, in order to get early warning system
- To develop forecasting technique for flash flood
- To develop the design flood and design rainfall for difference return periods and probable maximum precipitation (PMP) for duration of one to three days
- To display the hydrological behavior of watersheds after estimation the geomorphologic parameters from digital elevation model
- To compare the estimated design flood by unit hydrograph approach with the flood frequency analysis
- To develop accurate flood inundation maps based on flows the hydrologic model using all available data including GIS data sources

Capacity Building

Technology

Instrument

Experts

Observation

**National Training
(TNT GIS software)**

Historical Data

**Present Condition
Data**

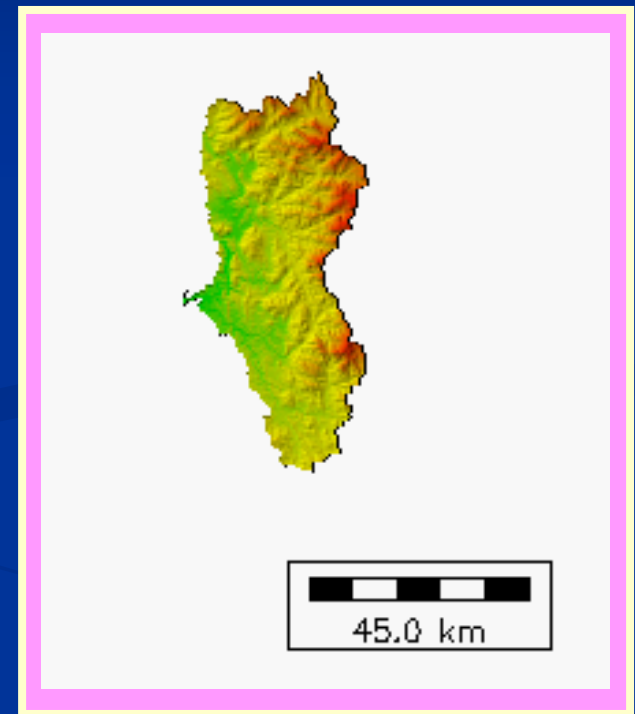
Analysis

**-Telemetering Station
-Receiving Station**

*** Flash Flood Forecasting
* Flood Inundation Map**

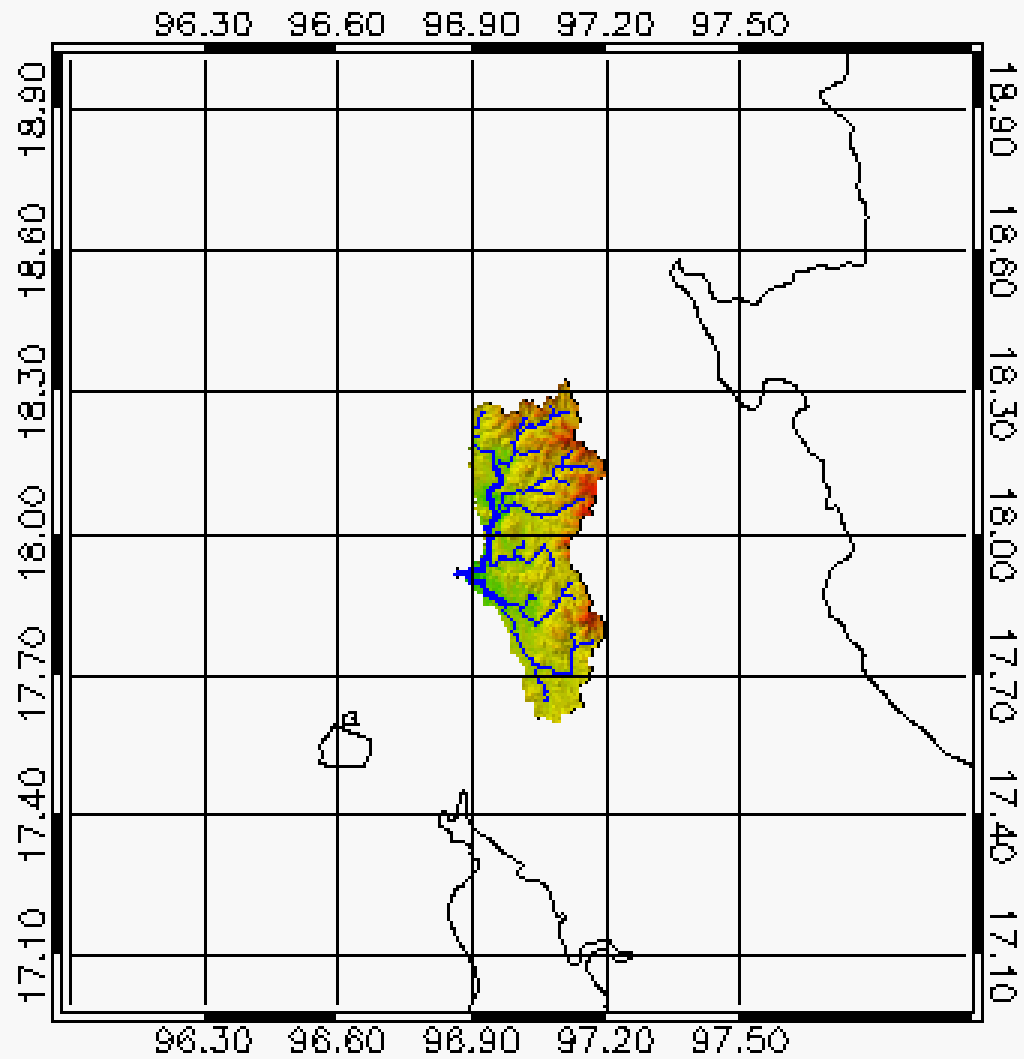
Results by using the River Tools Software

- Outlet location : 96.286° E 17.91° N
- Outlet Elevation : 8 m
- Basin area : 1699.31 km²
- Basin relief: 1.629 km
- Strahler order : 7
- Longest channel Length: 82.34 km
- Total channel length: 2581.1 km
- Drainage Density: 1.52 km⁻¹

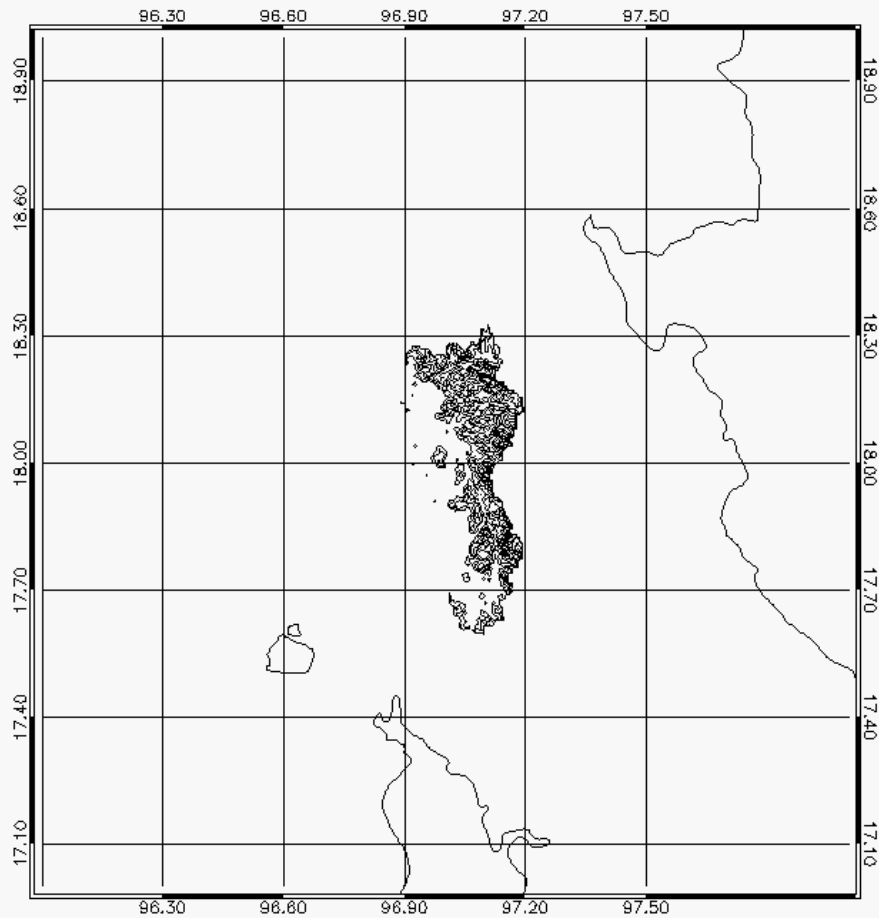


River Network of Shwegyin Basin

By using River Tools Software

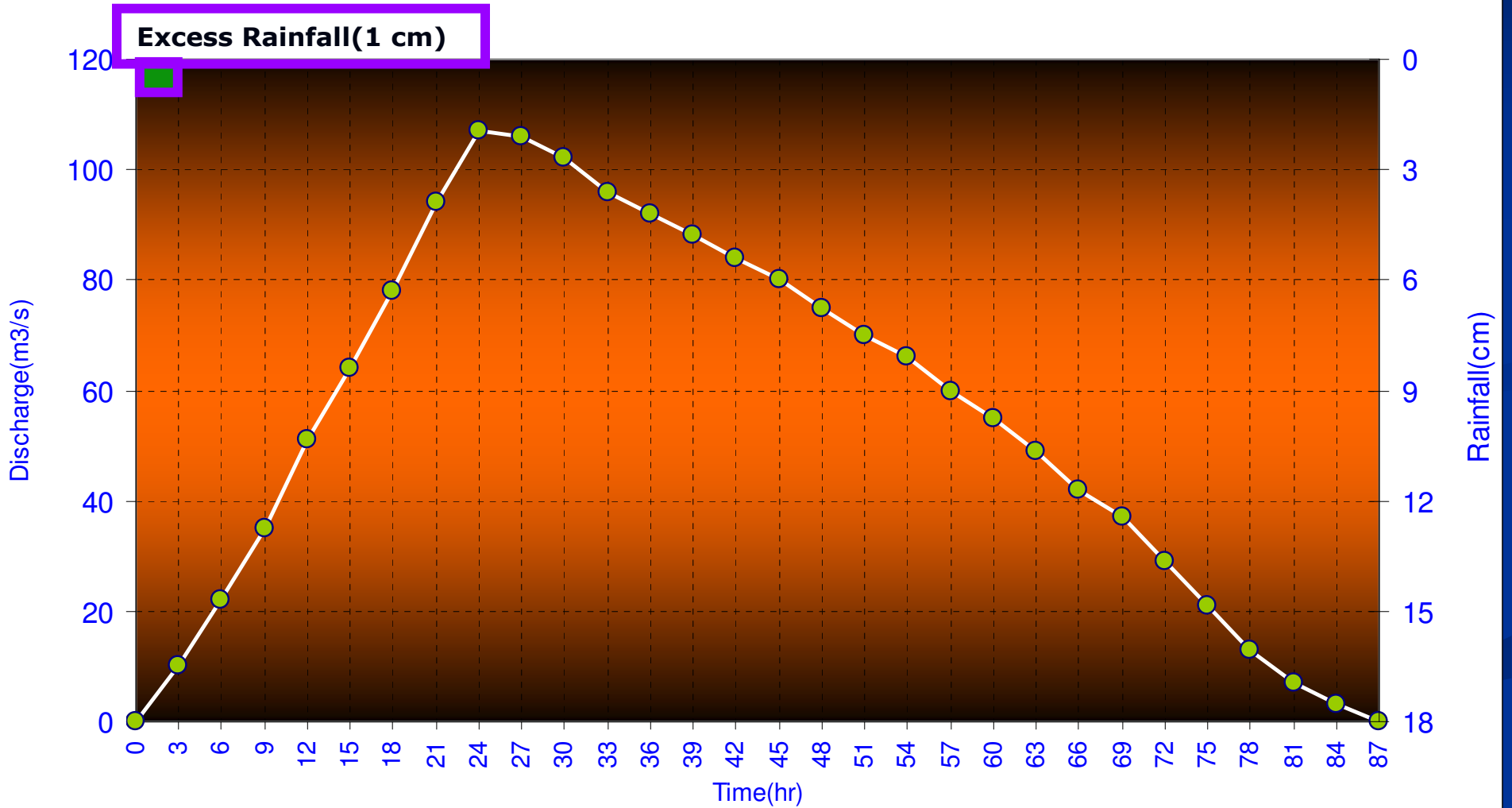


Contour (interval 150 m)



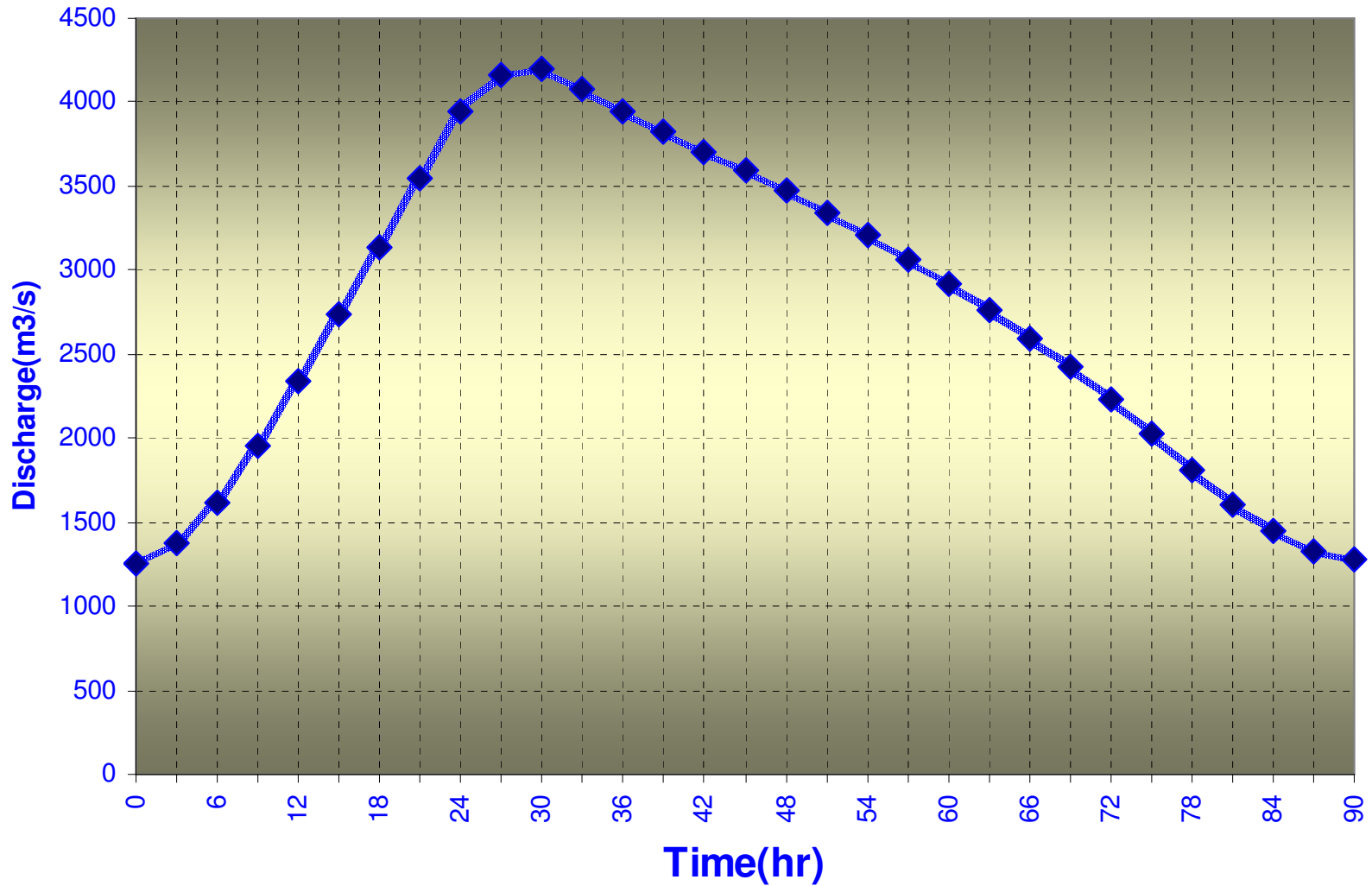
- mountain area in northern and eastern part
- plain area in western and southern part

Synthetic Unit Hydrograph for Shwegyin Catchment by Snyder Approach (3 hr Unit Hydrograph)



Direct Runoff Hydrograph from 3 hr Unit Hydrograph

Direct Runoff Hydrograph from 3 hr Unit Hydrograph



Requirements

- To develop forecasting technique for flash flood
 - * Advance technology for satellite rainfall estimation
 - * Advance technology transfer for flash flood forecasting

- To develop accurate flood inundation maps base on flows the hydrologic model using all available data including GIS data Sources
 - * Digital Elevation Models or Satellite Images

Draft Implementation Plan

- 2007 to collect the necessary data
- 2008-2010 to implement the objectives of the demonstration project



အမှတ် (၁၂) ရပ်ကွက် အေးချမ်းသာယာရေးနှင့်ဖွံ့ဖြိုးရေးကောင်စီနယ်မြေ



Flood View of Shwegyin





Flood View of Shwegyin



Thanks for your kind attention