



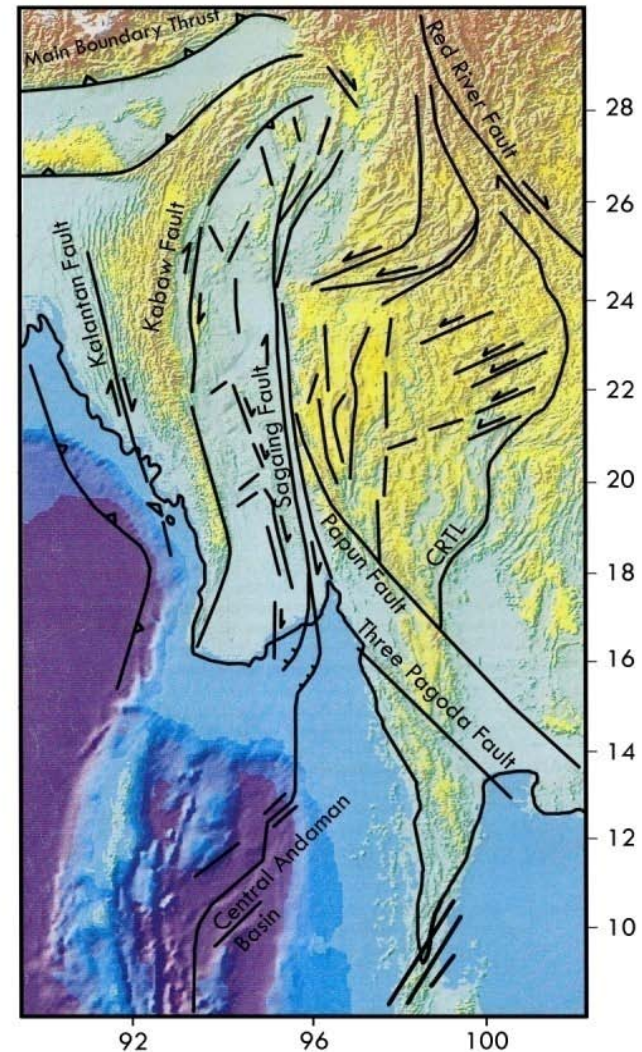
Tectonic Geomorphology of the Sagaing fault

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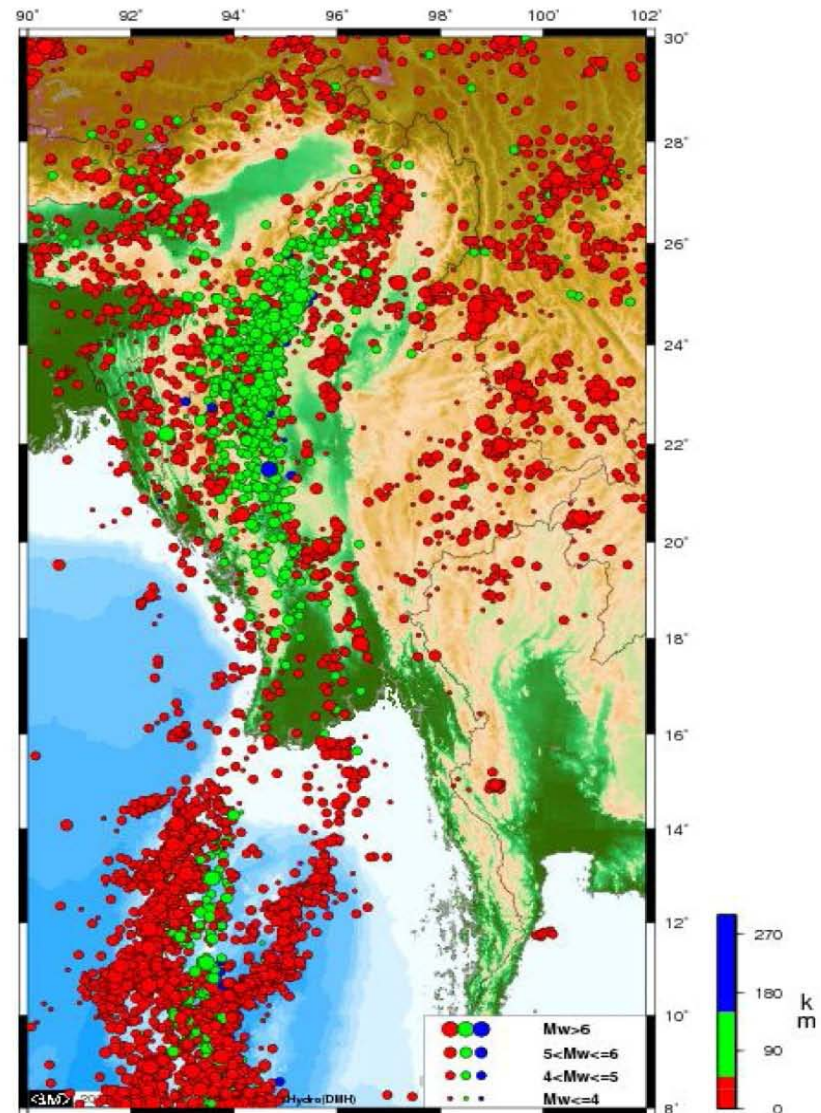
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Morphotectonic Map of Myanmar Region

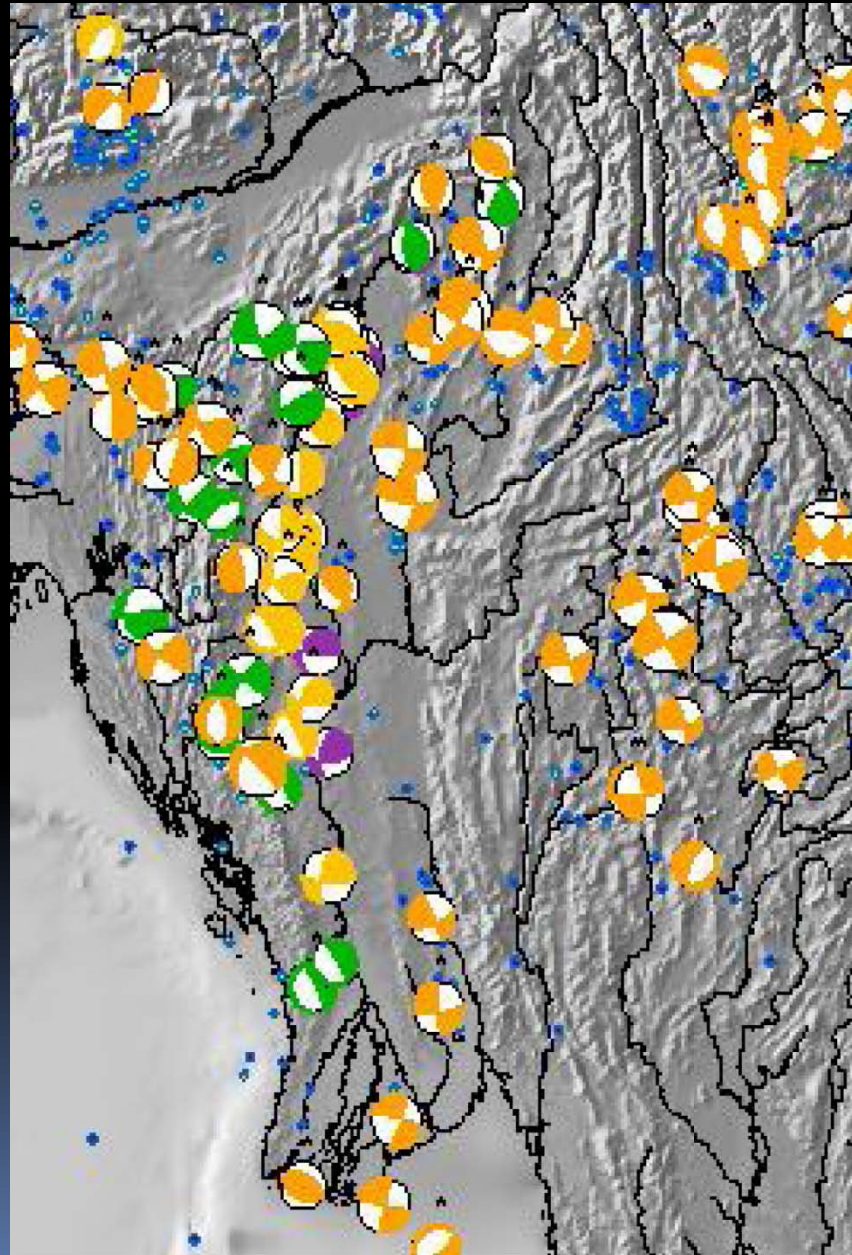
- Several lineaments with varied strike directions such as NNW-SSE, N-S, NE-SW and ENE-WSW on landsat images.
- Topographic map suggest that many of these lineaments have a geomorphic expression.
- Some of them show considerable seismic activity



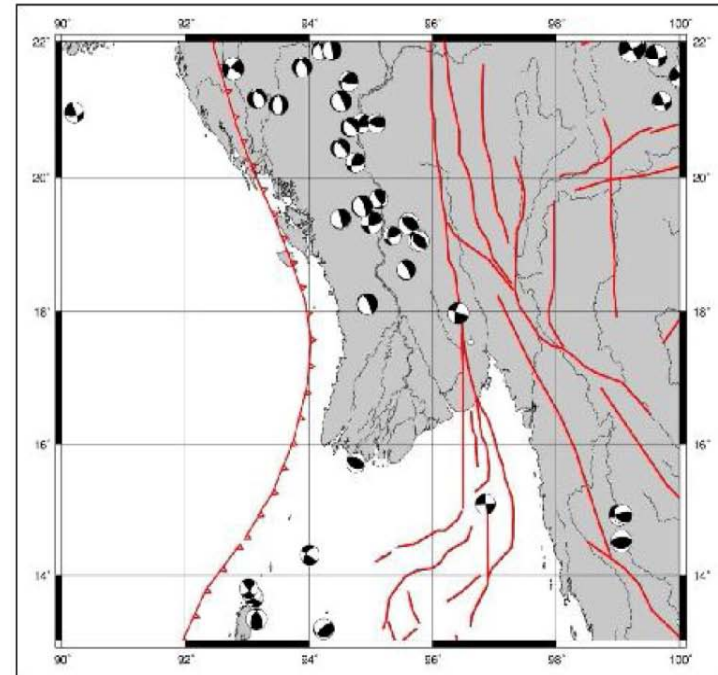
USGS EQ.Catalog 1973-2010



Focal Mechanism Solution



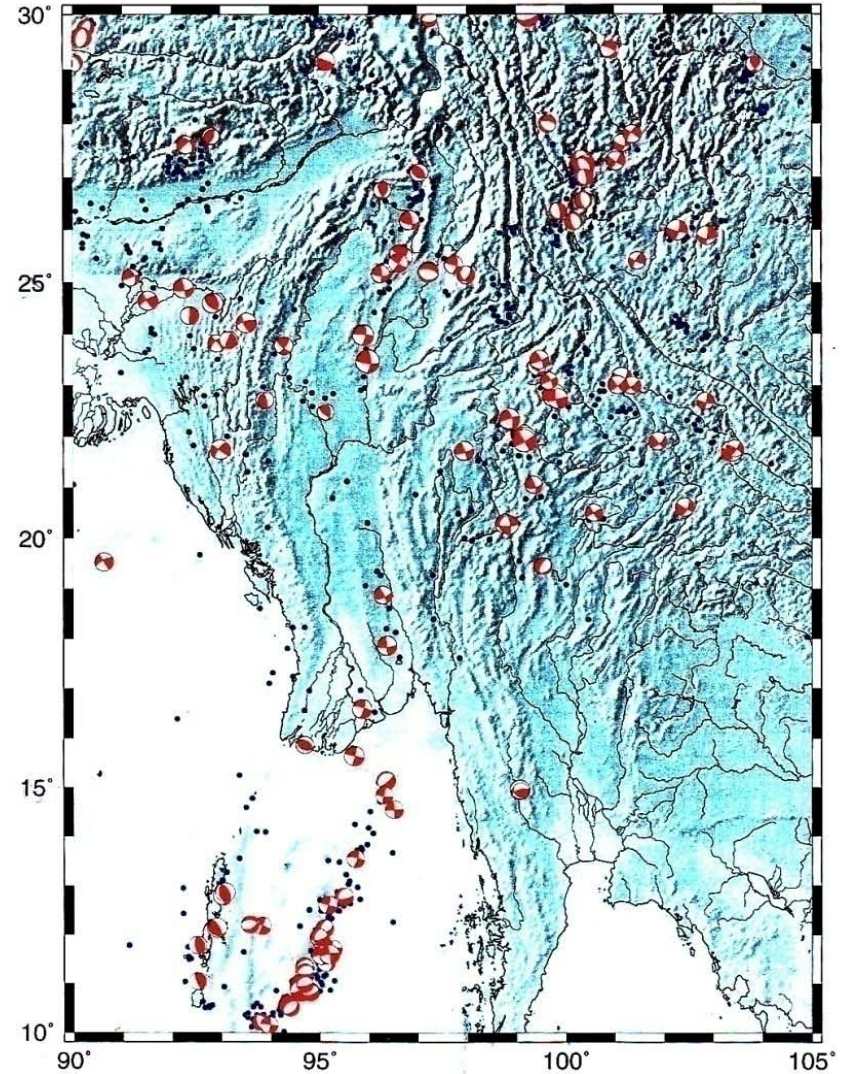
Focal Mechanism solution of CMB



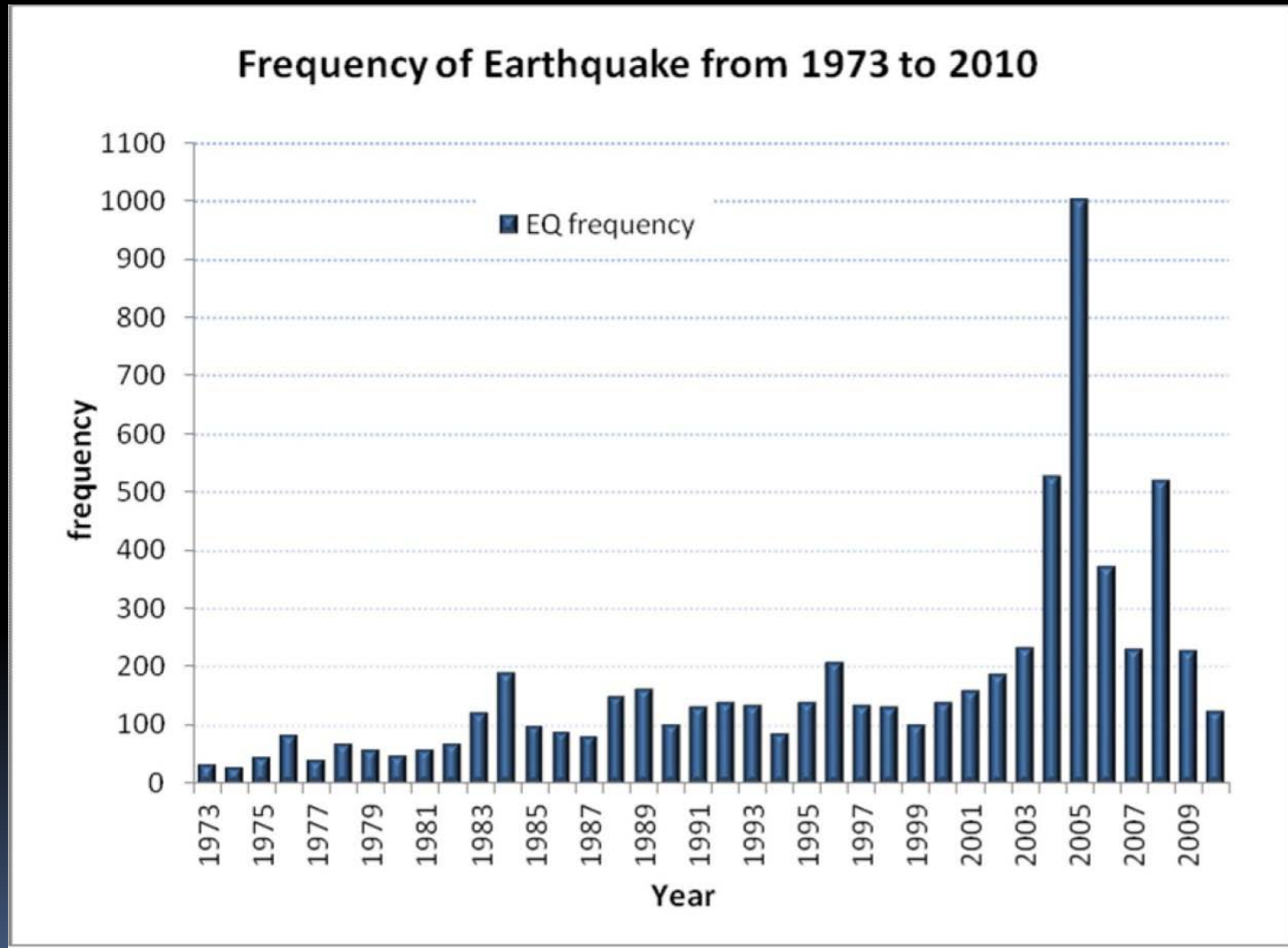
Focal Mechanism Solution of Earthquakes

Shallow Seismicity (0-40 km) in the Burma Area

CMT from Harvard and Epicenter from ENGDAH



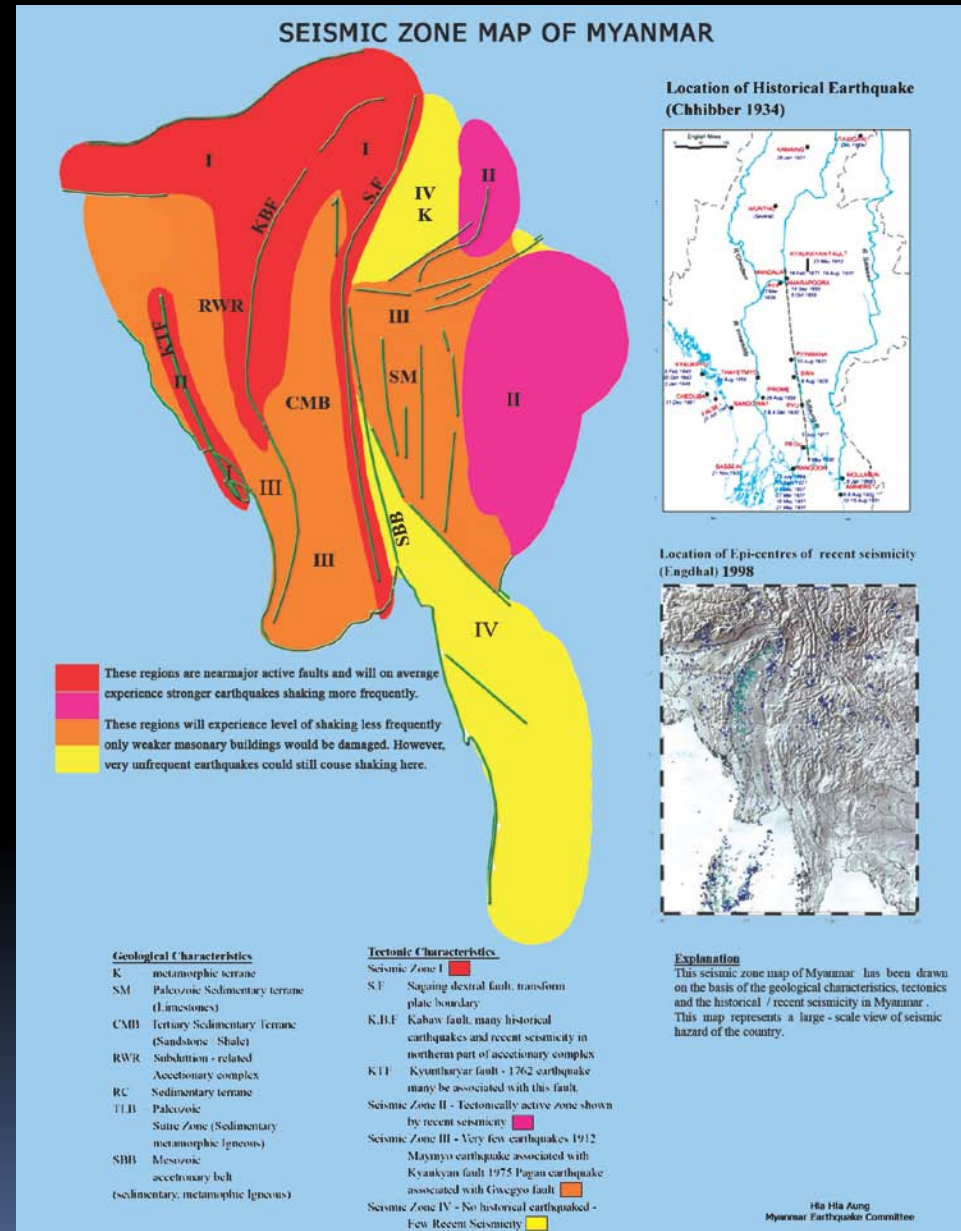
Frequency of Earthquake (DMH)



Seismic Zone Map of Myanmar

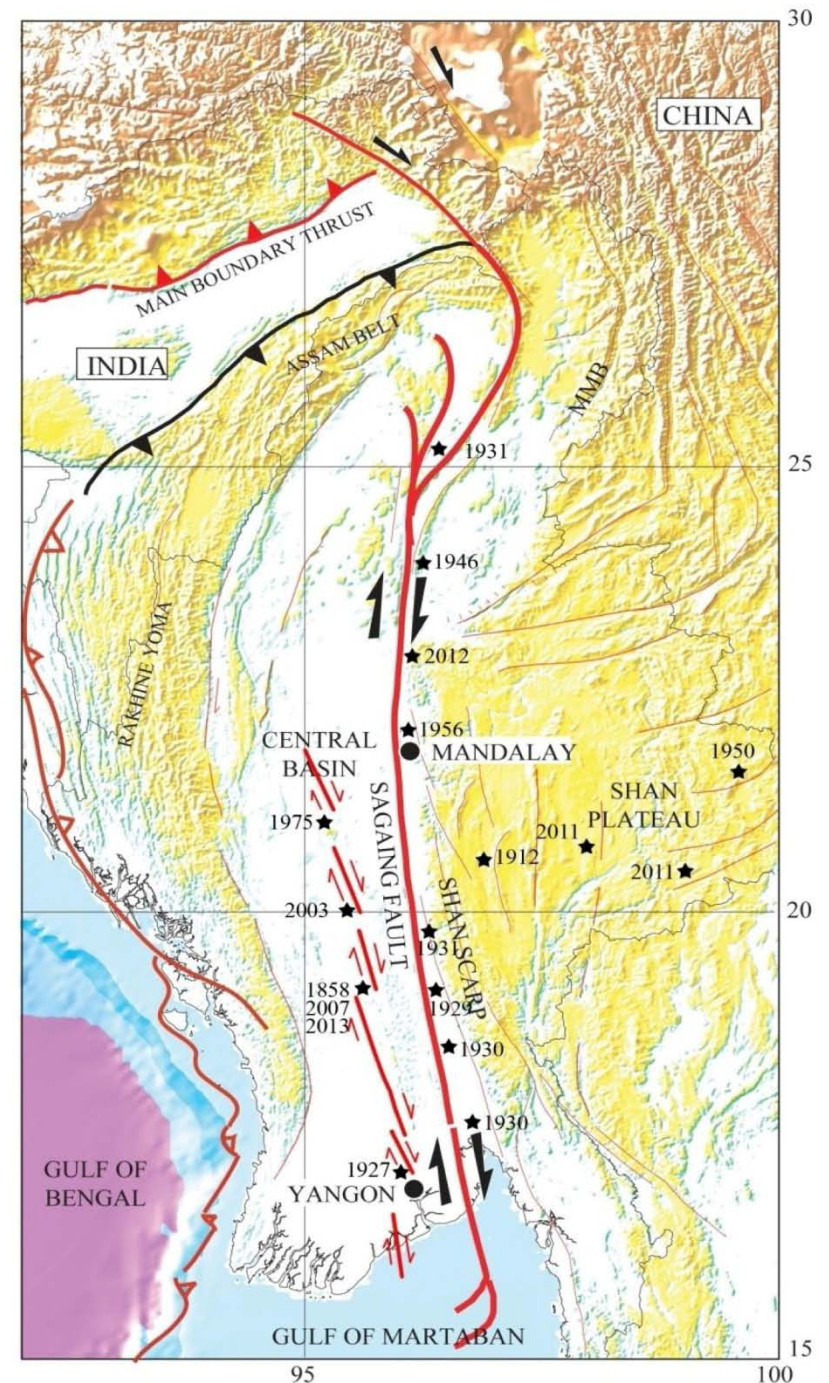
This seismic zone map of Myanmar is drawn on the basis of the geological structures, tectonic characteristics, and historical and recent seismicity in Myanmar region.

This map represents a large scale view of seismic hazard of the country.
(published in 2010)



Seismicity of Myanmar

- 1839 Ava Earthquake
- 1929 Sva Earthquake
- 1930 Bago(Pegu) Earthquake
- 1930 Phyu Earthquake
- 1931 Kamaing Earthquake
- 1931 Pyinmana Earthquake
- 1956 Sagaing Earthquake
- 1946 Tagaung Earthquake
- 1991 Tagaung Earthquake



1839 and 1956 eq.



1930 Bago eq.

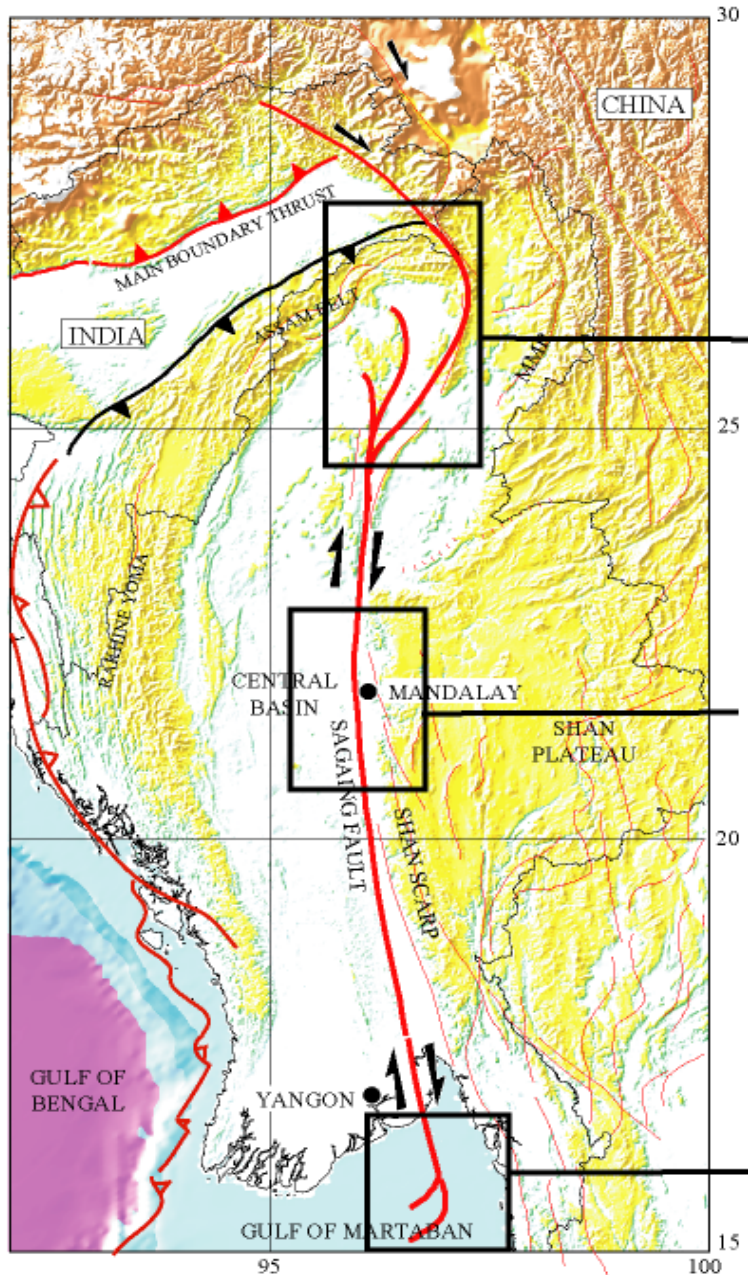
The Shwe-maw-daw Pagoda, Bago



Thabeikkyin Earthquake in Myanmar (2012)



Average trend of the Sagaing fault



Fault geometry of the Sagaing fault

- Fault longitude- $96^{\circ} 30'E$ to $96^{\circ} 08'E$ to $96^{\circ} 43'E$
- Relatively more westerly in the south-N-S in the central – then easterly in the north
- Average fault trend- $N 9^{\circ} W$
- Depth-96km
- Velocity-18-25mm/yr
- Spreading in CAB- $N 29^{\circ} W$ at a rate of 30mm/yr
- NW-SE oriented spreading and drifting of Burma plate along ridge segments in Gulf of Mottama
- Southern end of Sagaing Fault is northernmost of these oceanic transforms
- Offset-150km

Tectonic geomorphic features observed along the Sagaing fault

Step-overs (from south to north)

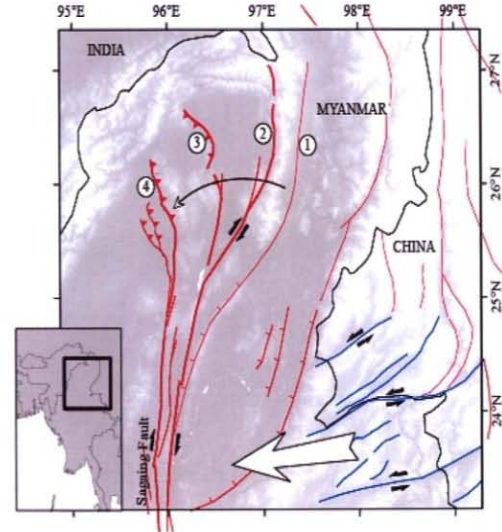
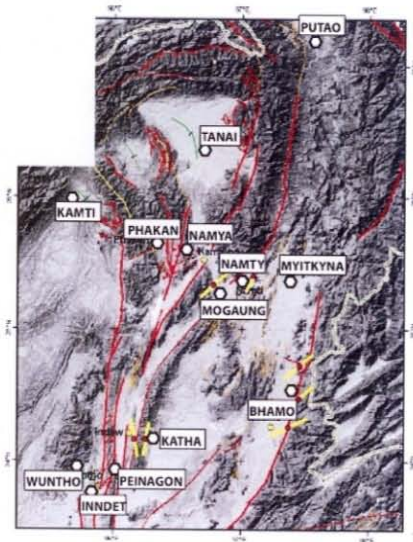
- 17° N Kabauk In (1930 Bago Eq.)
- 17° 10N Zwedaik In
- 17° 27N Shwe dan In
- 21° 58N Yega In (1839 Eq., 1956 Eq.)
- 22° 30N a sag pond south of Singu plateau
- 23 N
- 23 45'N a sag pond west of Hti-chaing (1946, 1991 Tagaung Eq.)
- 24° N a sag pond north of Hti-chaing
- 25° N Indawgyi lake (1931 Kamaing Eq.)

Releasing/restraining bends

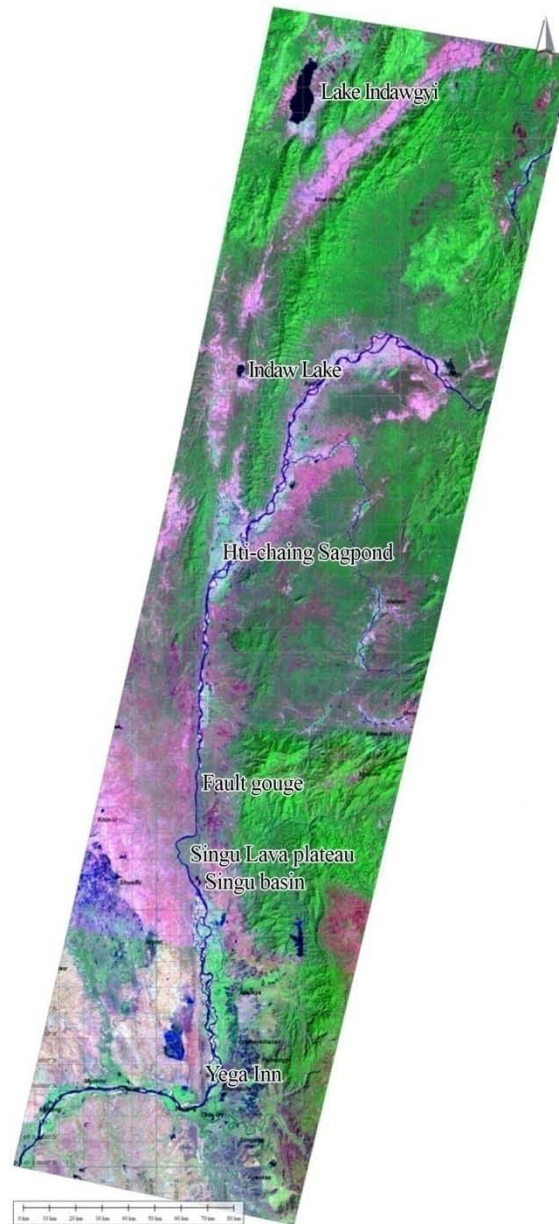
- 18° 30N to 19° 35N (1930 Phyu Eq. /1931 Pyinmana Eq.)
- 17° 05N to 17° 20N

Linear fault Scarps Many places (1929 Swa Eq.)

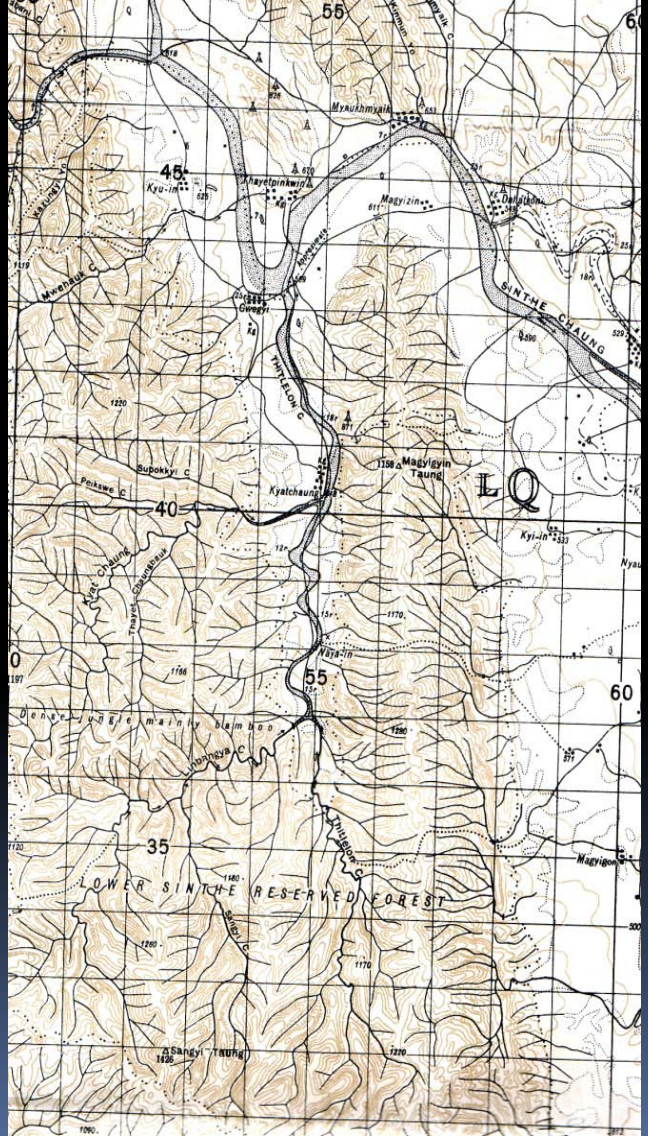
Compressive horsetail structures at the northern end of the Sagaing fault



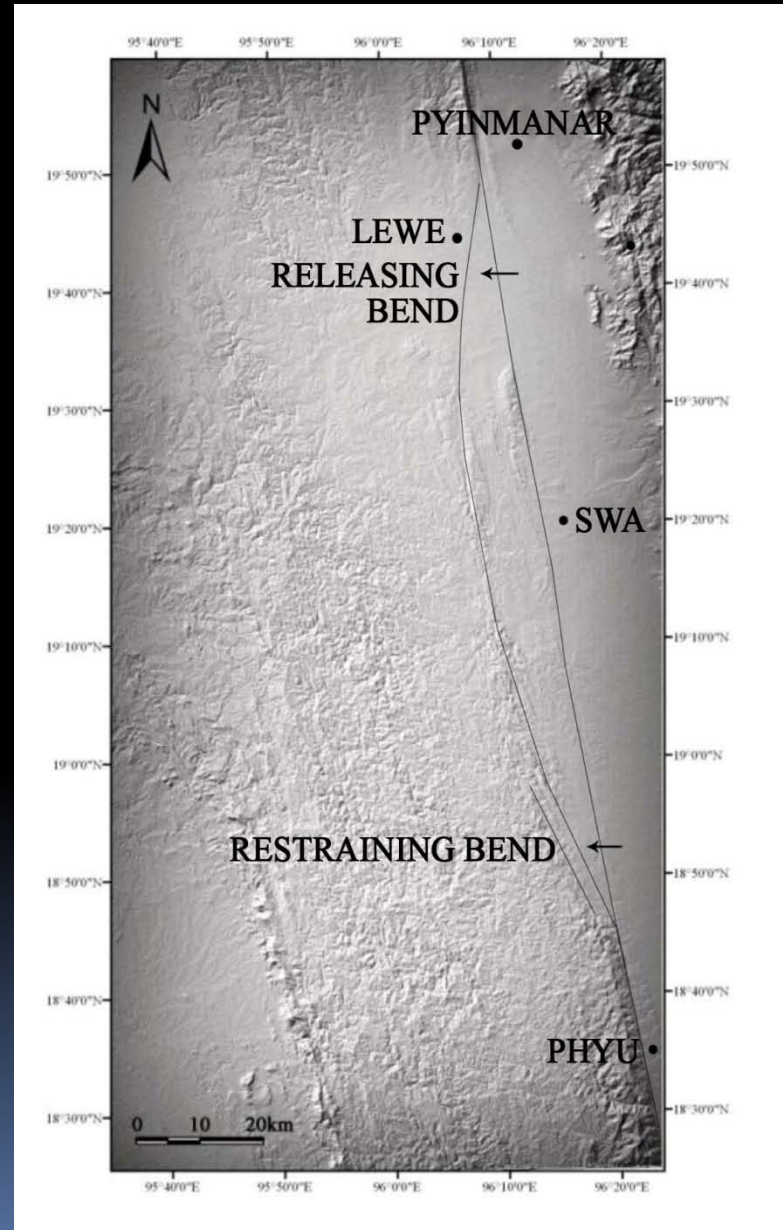
Tectonic geomorphic features



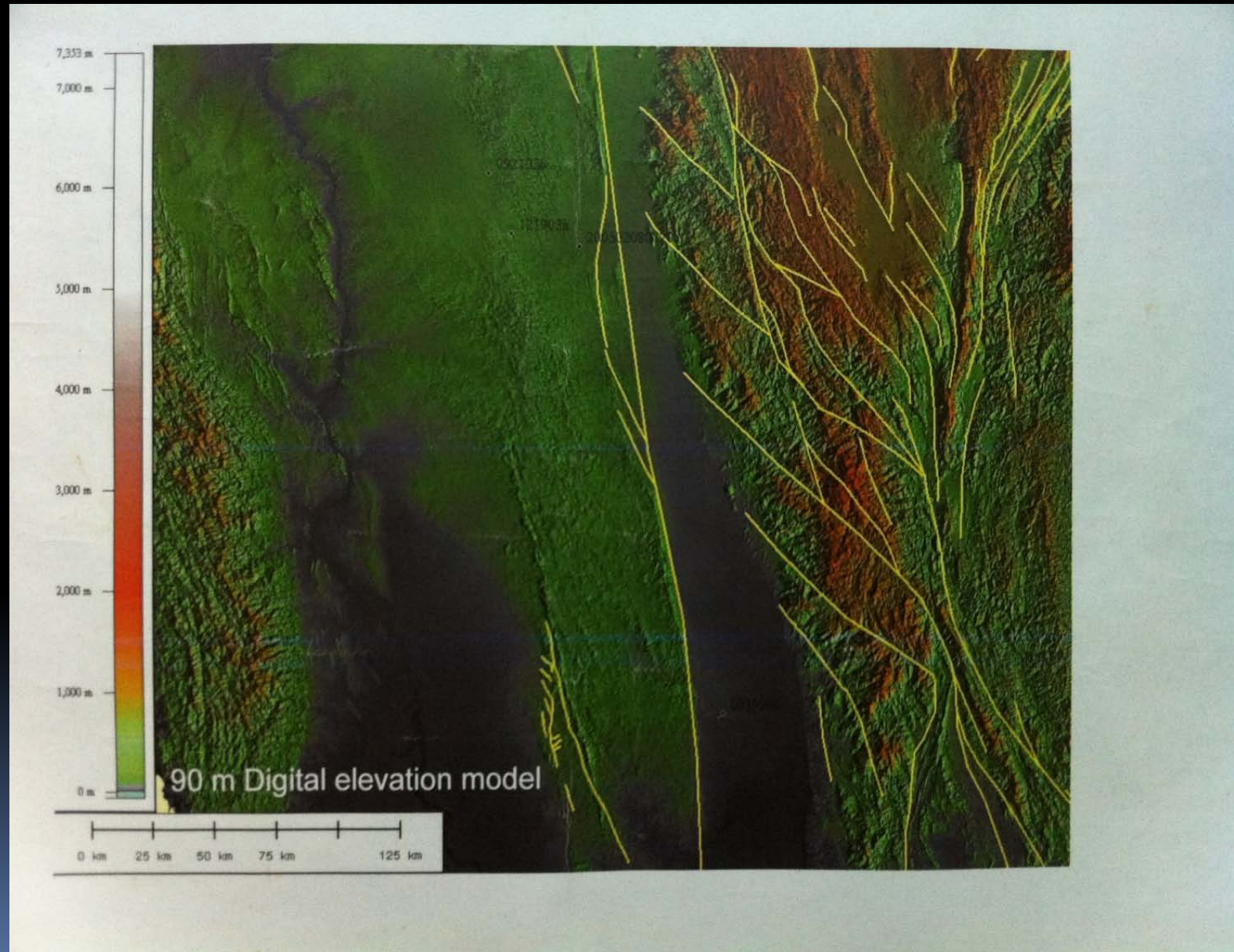
Offset stream channel



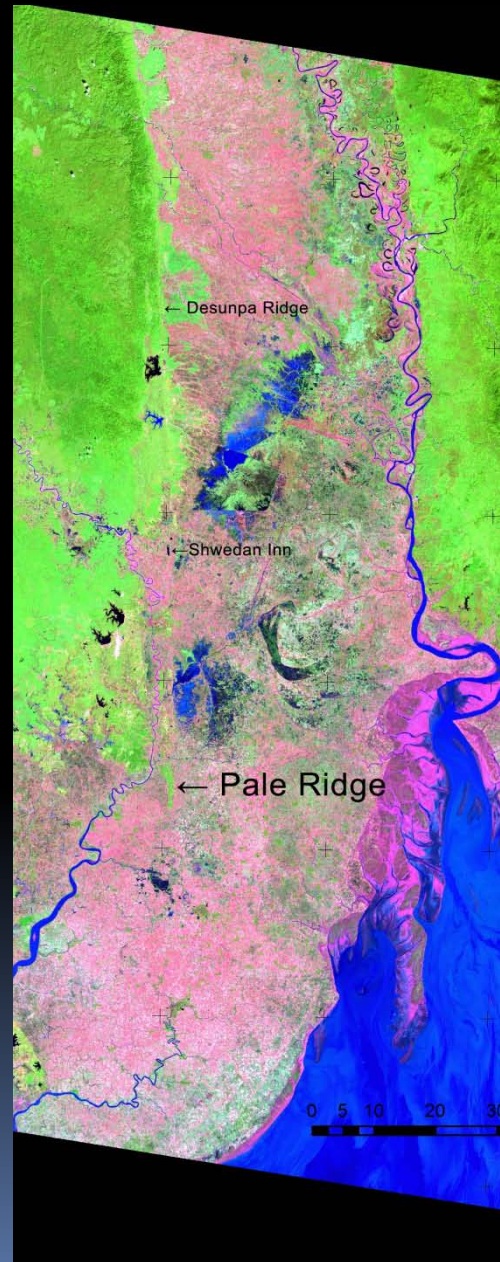
Releasing/restraining bends



90 m digital elevation model



Southern part of Sagaing fault



Extensional Horsetail structures at the southern end of the fault in the Mottama Gulf

From Nyaunglebin-Bago latitude, the Sagaing fault branch into two main faults: WSF & ESF

WSF connects to CAB with a series of pull-apart basins offset by transform faults

WSF is active fault

(Source: GIAC Project)



Thank you all !

