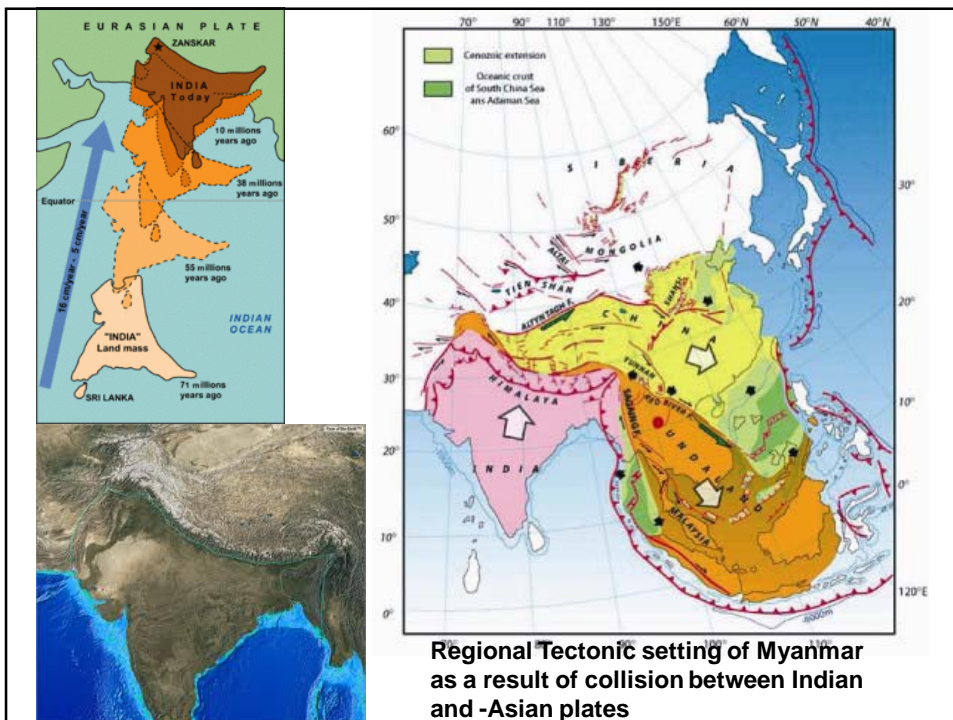


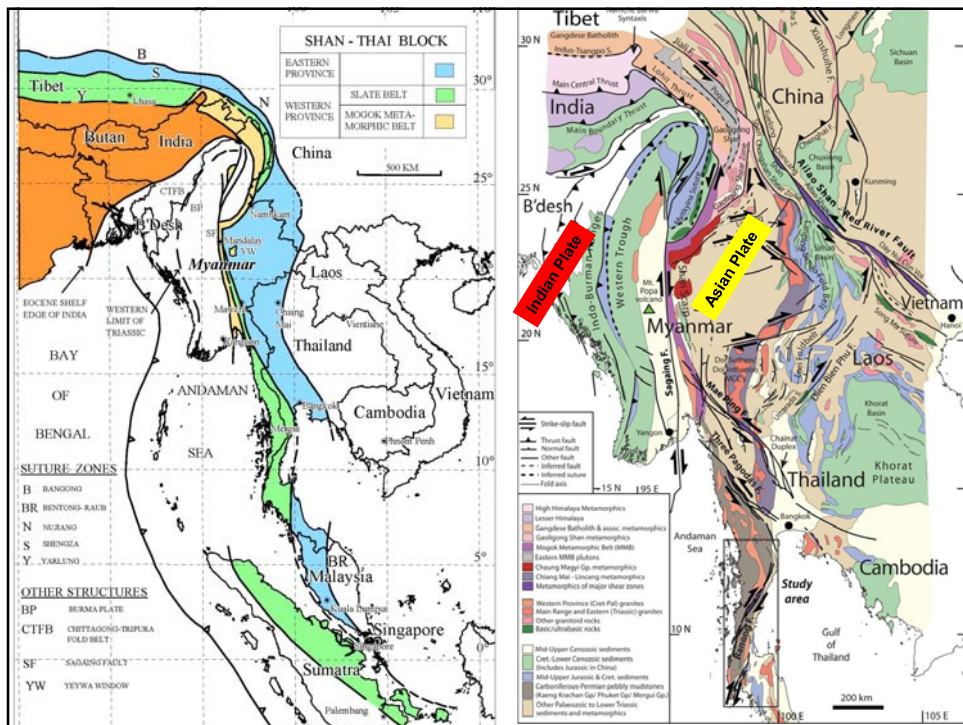
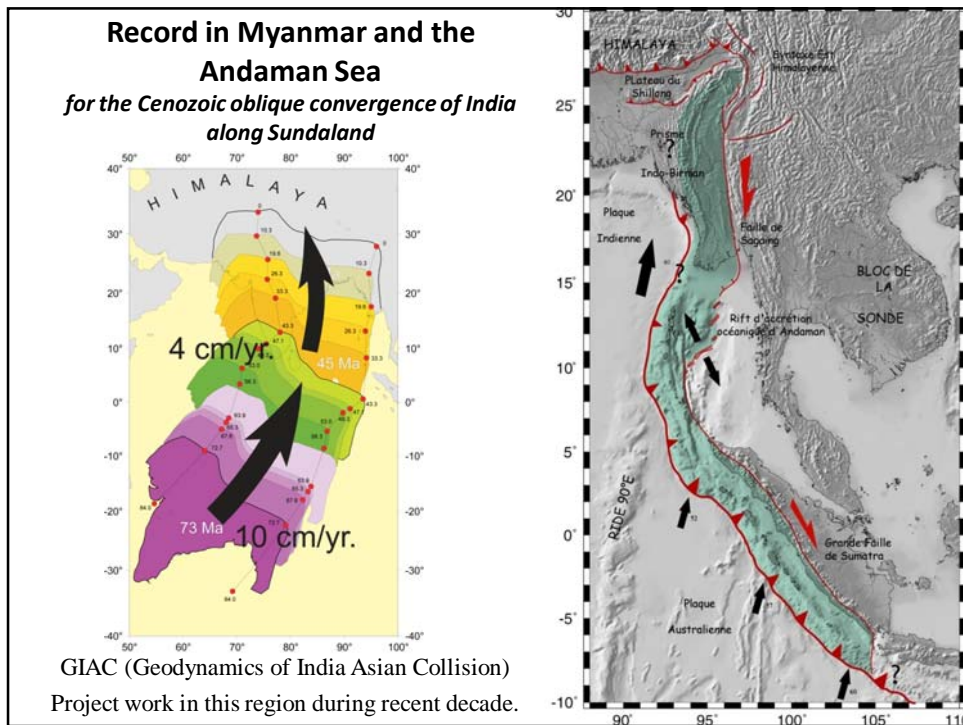
Geological outlook, Survey of Myanmar's Minerals & Resources

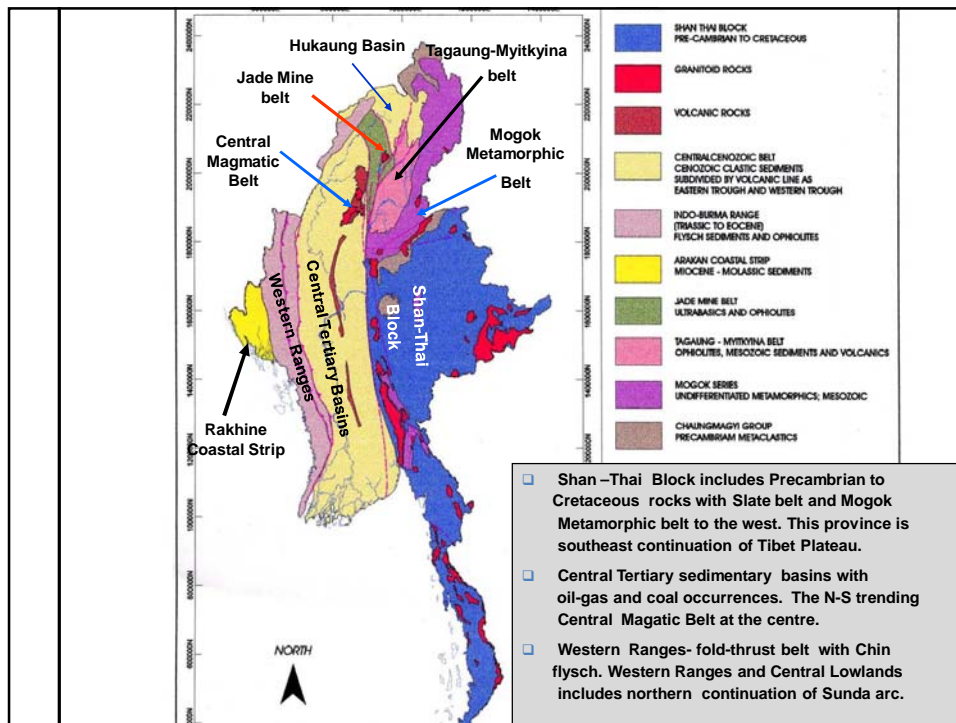
Dr Ye Myint Swe
Director General

DEPARTMENT OF GEOLOGICAL SURVEY AND MINERAL EXPLORATION
MINISTRY OF MINES

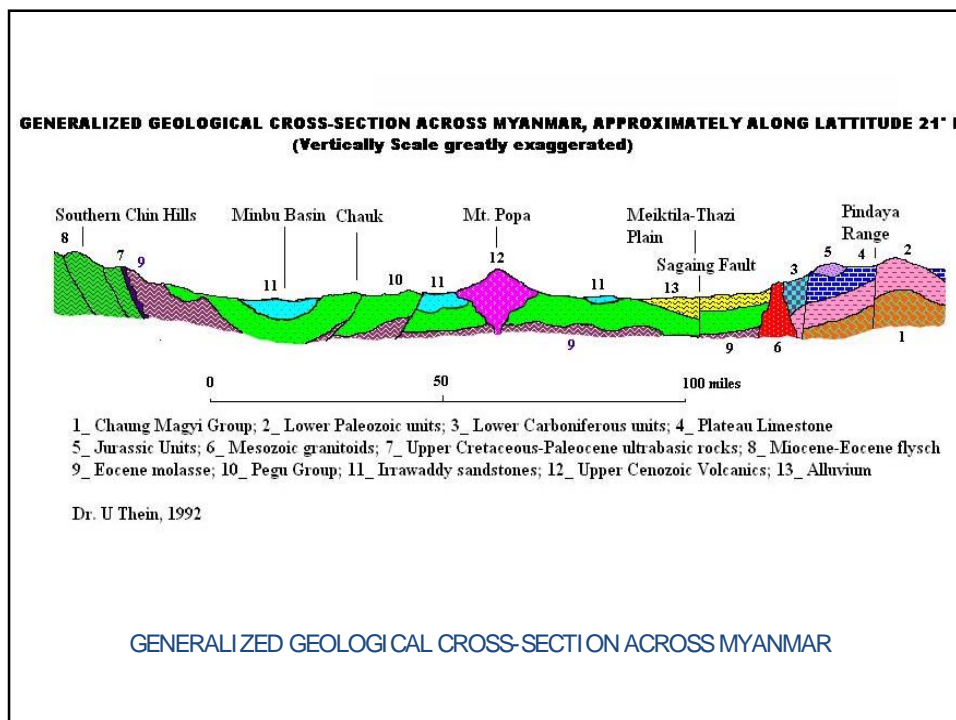
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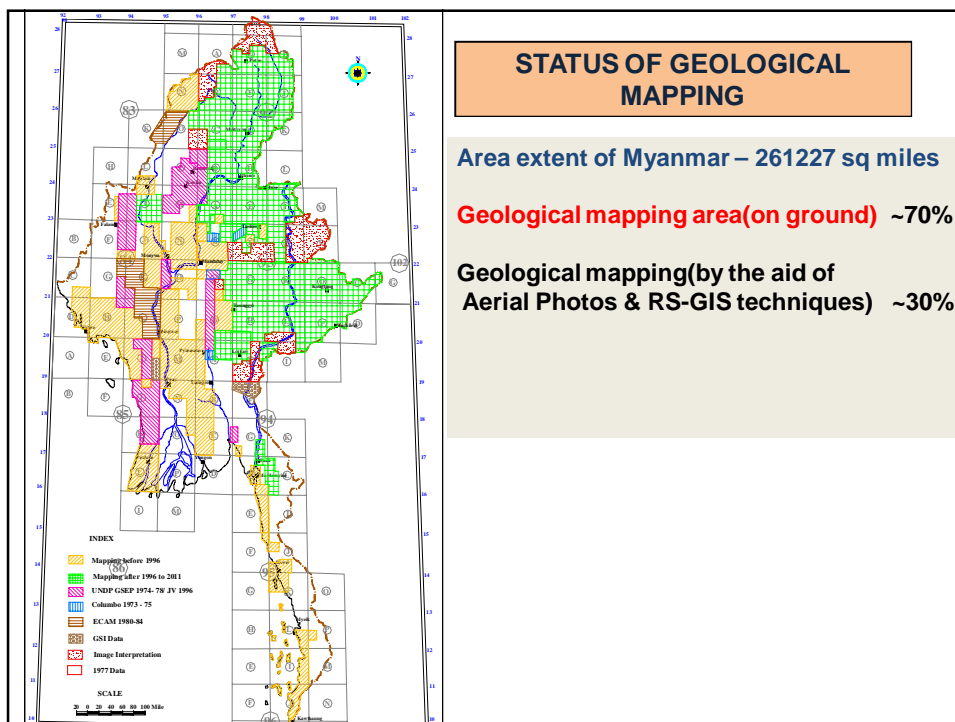
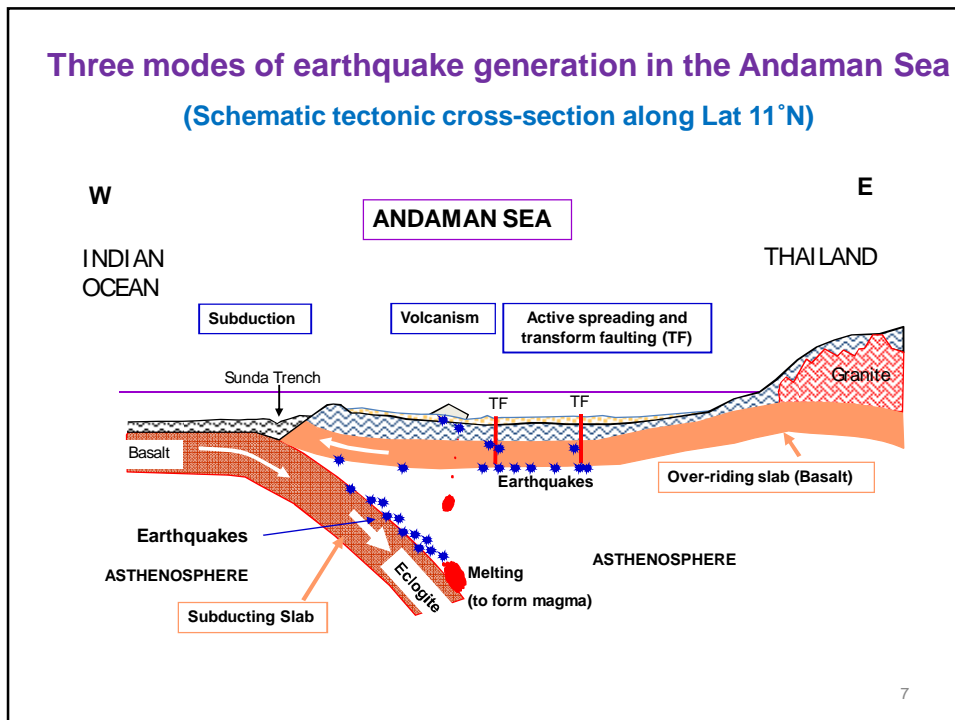


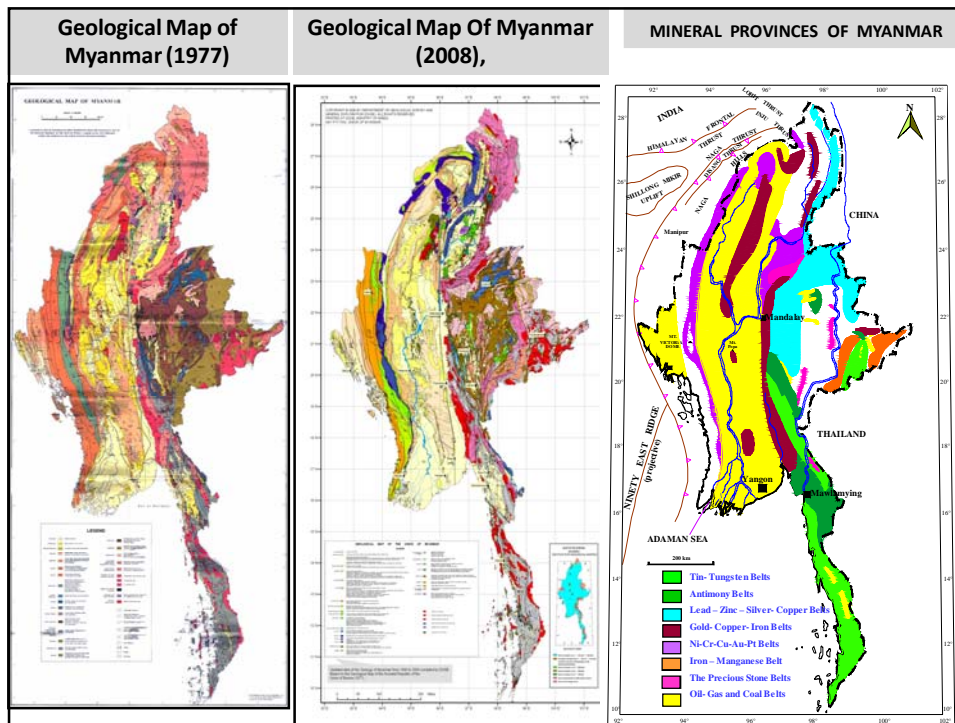


- Shan–Thai Block includes Precambrian to Cretaceous rocks with Slate belt and Mogok Metamorphic belt to the west. This province is southeast continuation of Tibet Plateau.
- Central Tertiary sedimentary basins with oil-gas and coal occurrences. The N-S trending Central Magmatic Belt at the centre.
- Western Ranges- fold-thrust belt with Chin flysch. Western Ranges and Central Lowlands includes northern continuation of Sunda arc.



Three modes of earthquake generation in the Andaman Sea (Schematic tectonic cross-section along Lat 11°N)





In Myanmar, Mineral occurrences include

1. Metallic ore minerals

Iron & metals for steel alloys- *Fe, Mn, Cr, Ni, Mo*

Base & non-ferrous metals – *Pb, Zn, Cu, Sn, W, Sb & Ti*

Precious & rare metals- *PGM, Au, Ag, Nb, Ta*

2. Industrial minerals & non-metallic raw minerals

Chemical & fertilizer minerals- *Barite, fluorite, Gypsum, rock salt*

Ceramic & refractory minerals- *clay, limestone, dolomite, feldspar, quartz, glass sand*

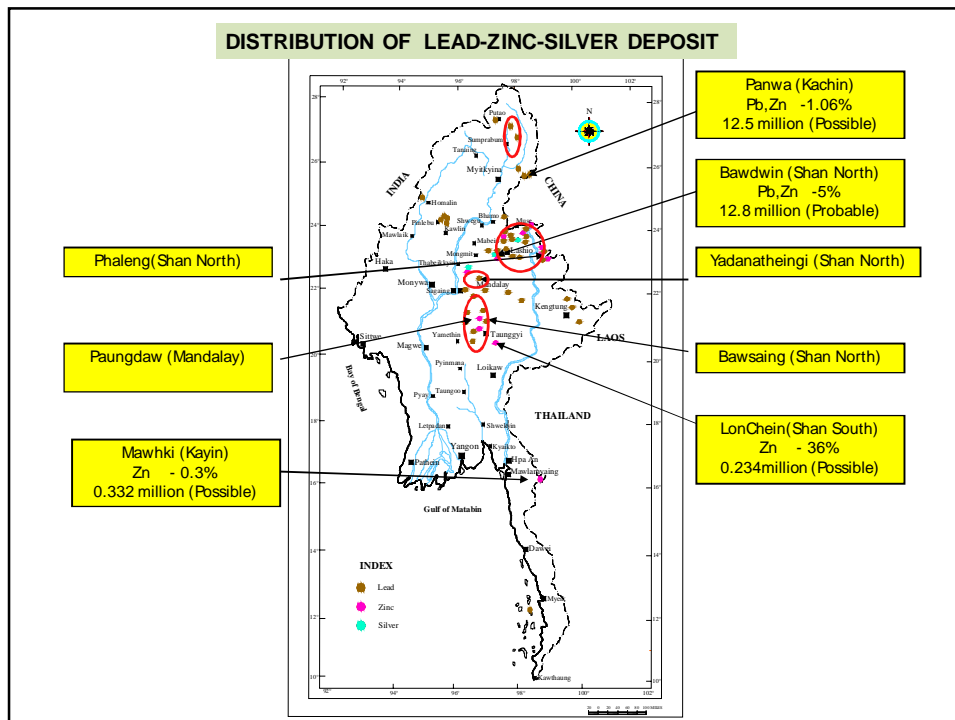
Construction & building materials- *Decorative stones, road materials, limestone for cement*

3. Preceous & semi-precious Gemstones

Ruby, Sapphire, Jade, Diamond, etc

4. Fuel minerals

(oil, natural gas, oil shale, coal,

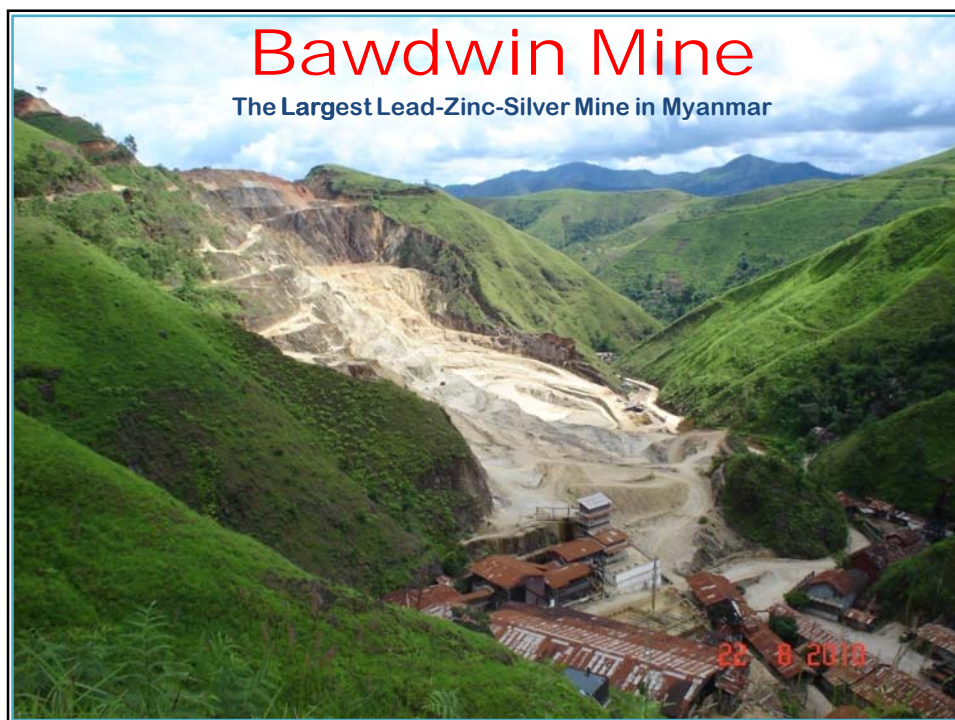
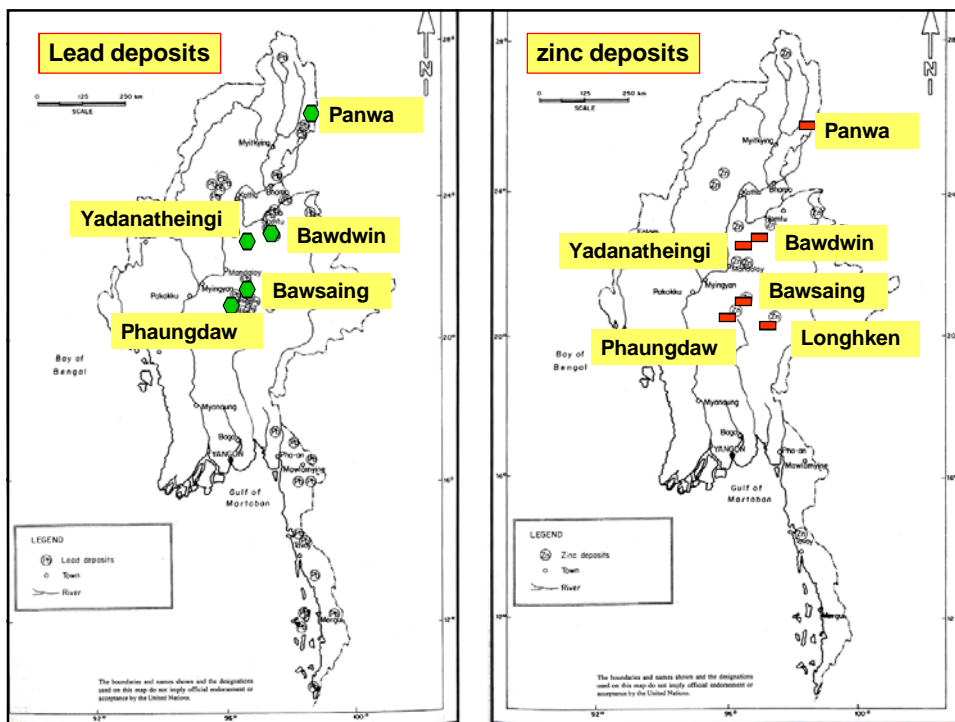


Lead-Zinc-Silver Deposits

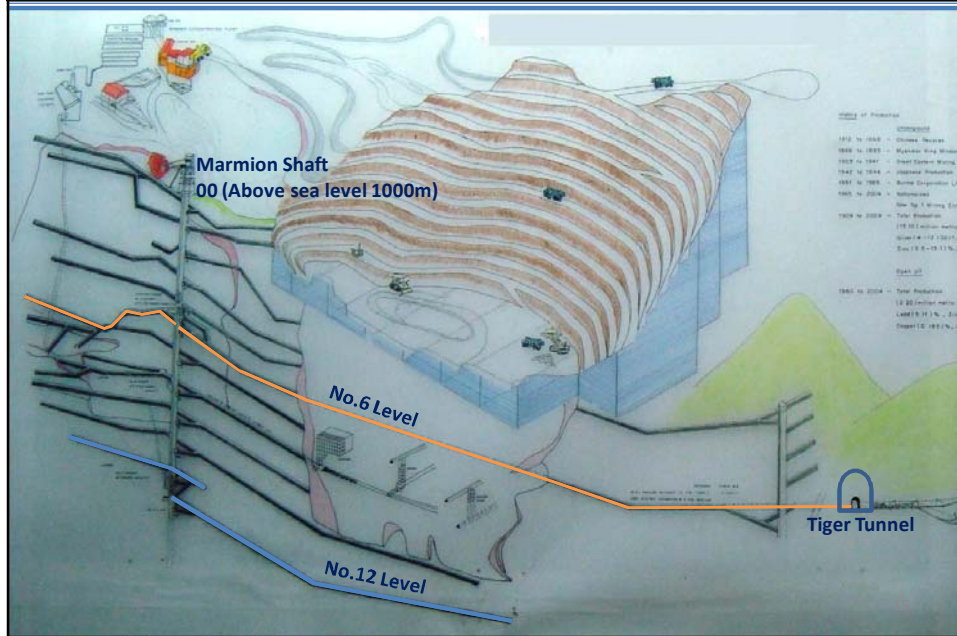
-more than 100 occurrences of Pb-Zn-Silver mineralization in Myanmar

-mineralization occurs as five different styles

1. Volcanogenic massive sulphides type(VMS) at Bawdwin mine
2. Mississippi valley type deposit at Bawsaing mine
3. Cavity filling vein-type in Yadanatheingi mine
4. in veins and skarn type near the contact between granitic rock and marble at Phaungdaw mine
5. Zinc carbonate deposit (secondary deposit) at Long Hken mine

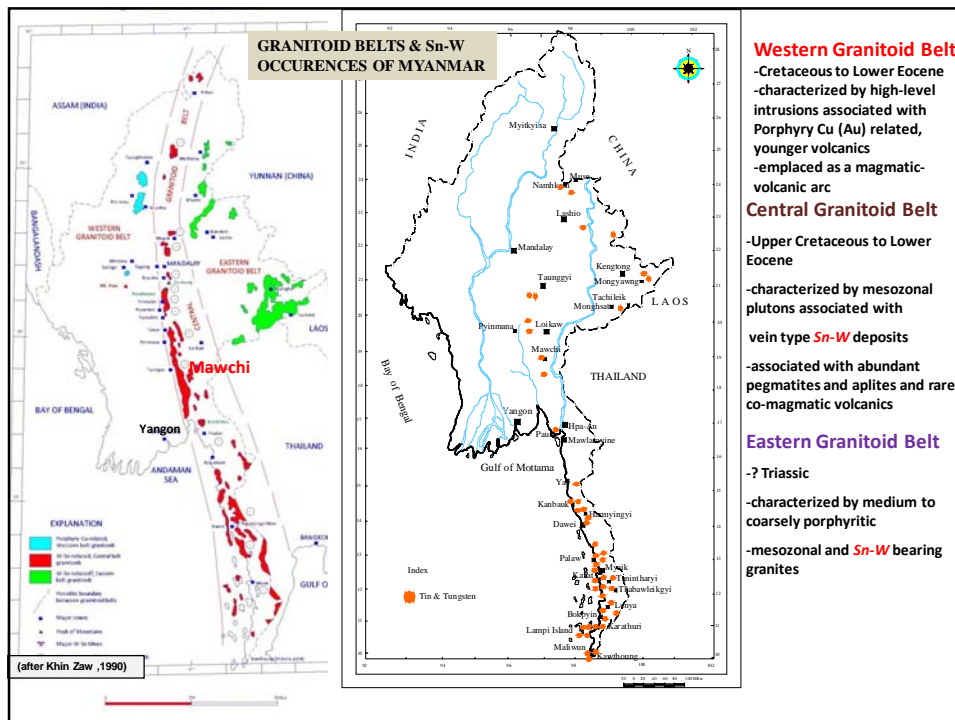


Main shaft and underground mine



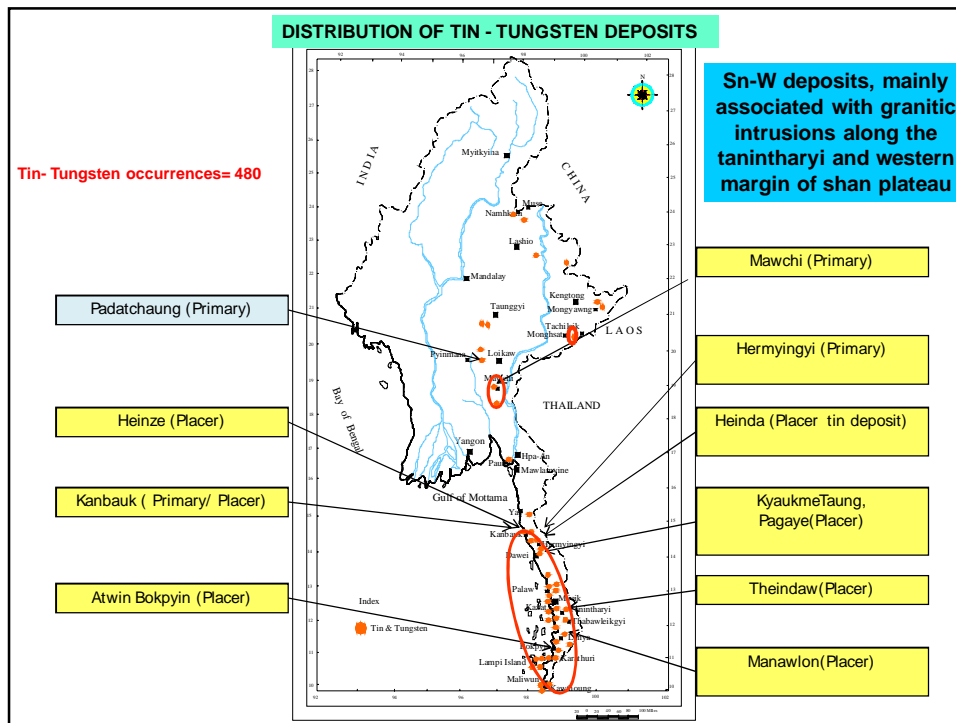
Bawsaing Pb-Zn Mine, Southern Shan State





Tin-tungsten Deposits

- one of the most important mineral resources in Myanmar
- occurs along the granitic belt in SE Asia peninsula (distributed over more than 1200 Km in Myanmar with more prominent in Tungsten toward the north,
- passing through the Tanintharyi Division, Kayin, Mon, Kayah & Shan states and east of Pyinmana.
- Tin-tungsten ores occur in close association with granitoids and related pneumatolytic rocks emplaced during Jurassic, Cretaceous and possibly Triassic. The country rocks of these intrusive masses consist of the clastic Mergui Series, Taungnyo Group, Mawchi Series and Lebyin Group.
- Most of the cassiterite is mined from placers while tungsten is mined from hard rock veins.

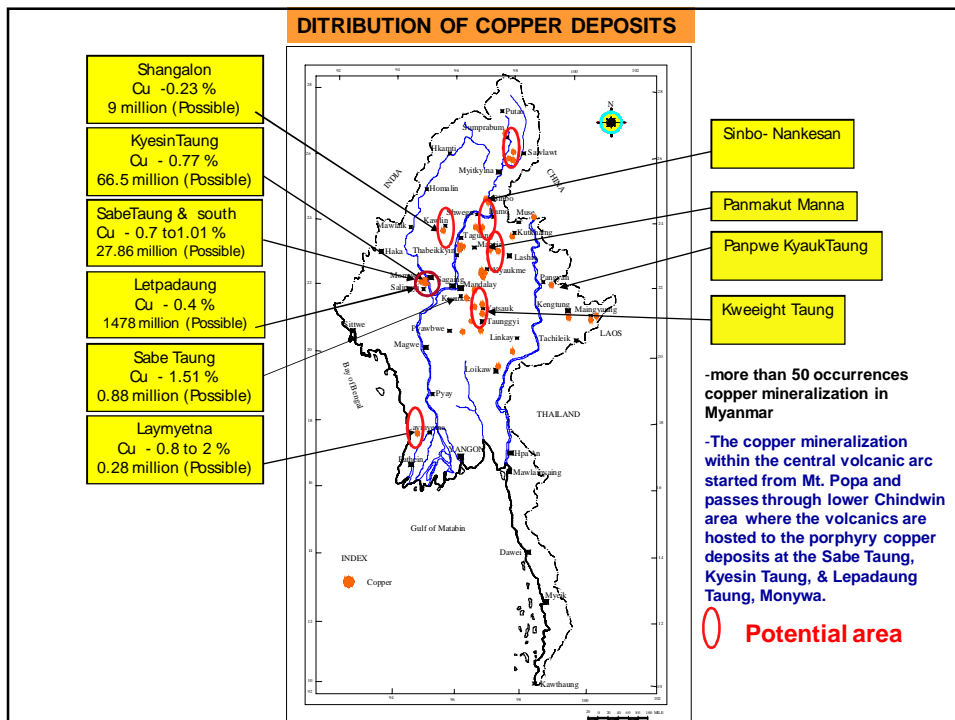
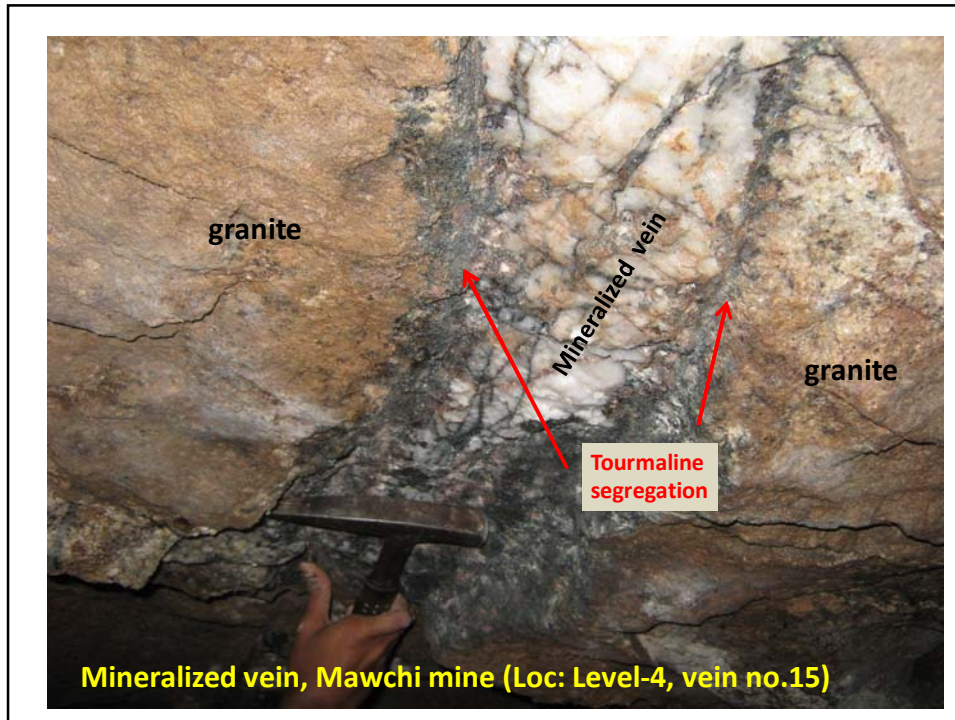


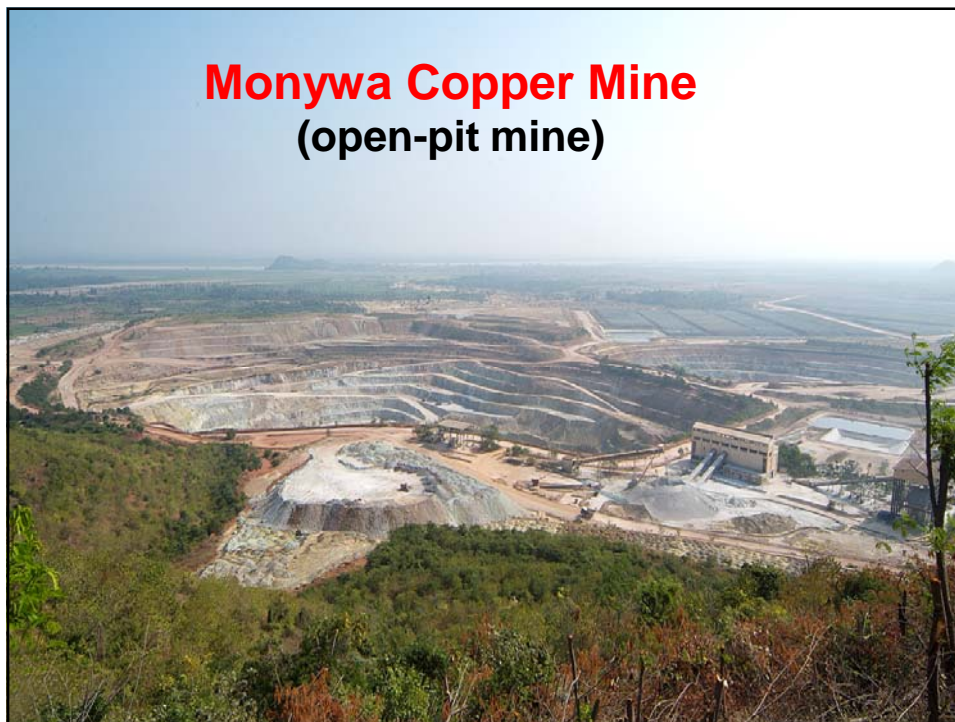
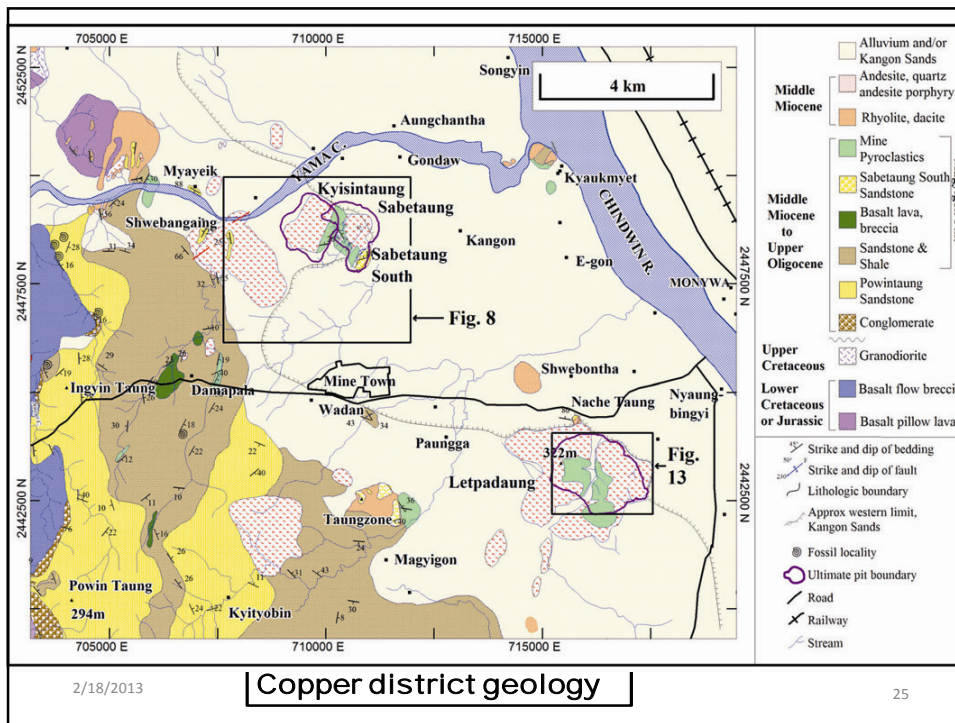


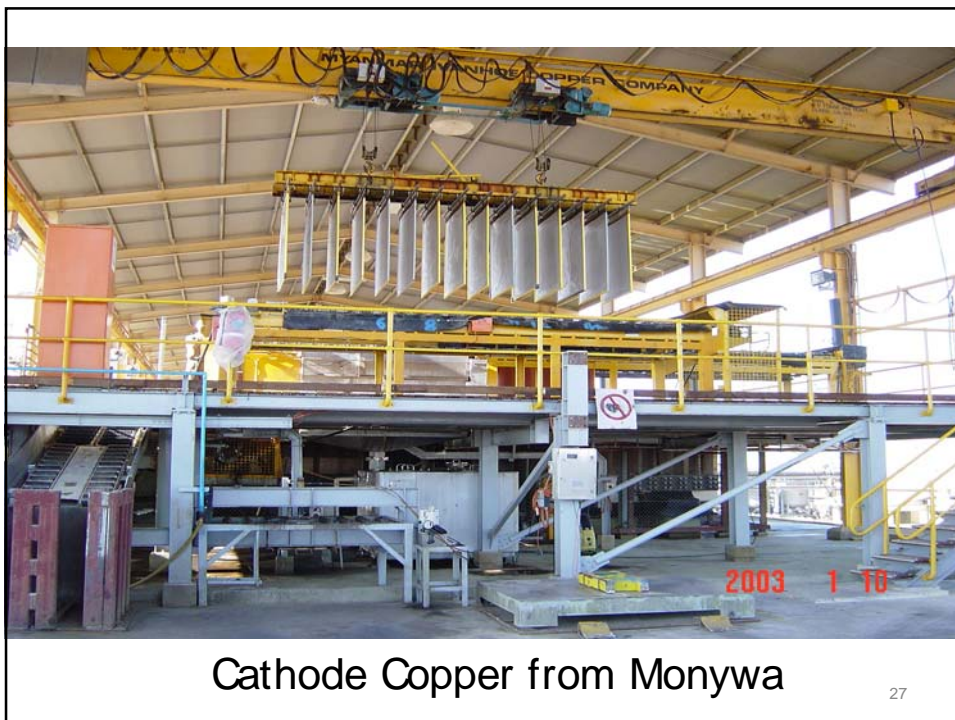
Heinda mine, Dawei

Bucket Dredger in Tin-tungsten mining

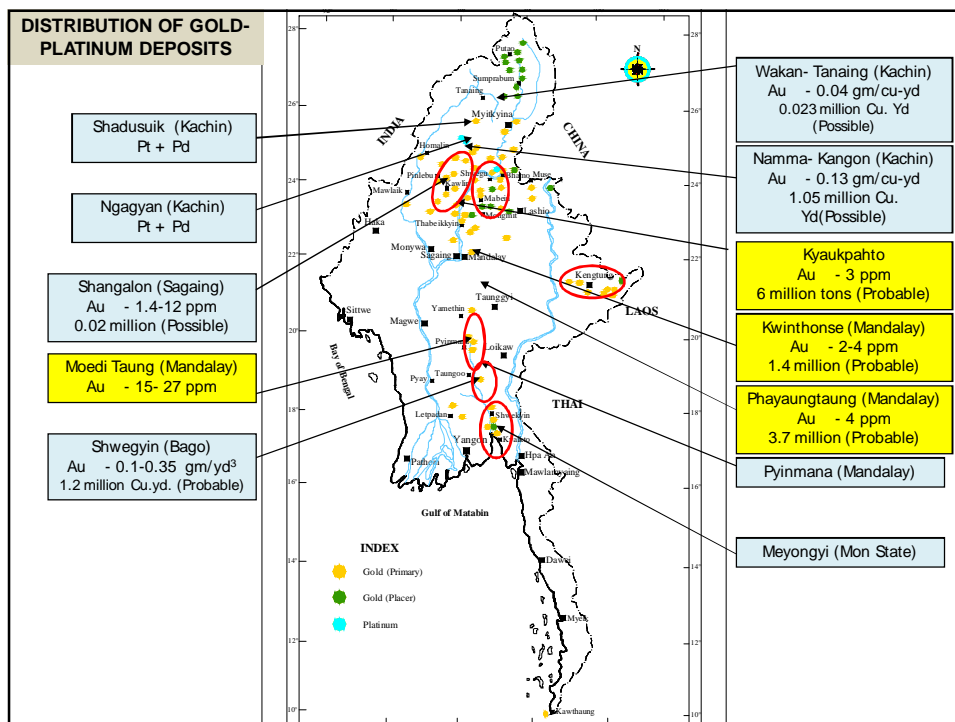


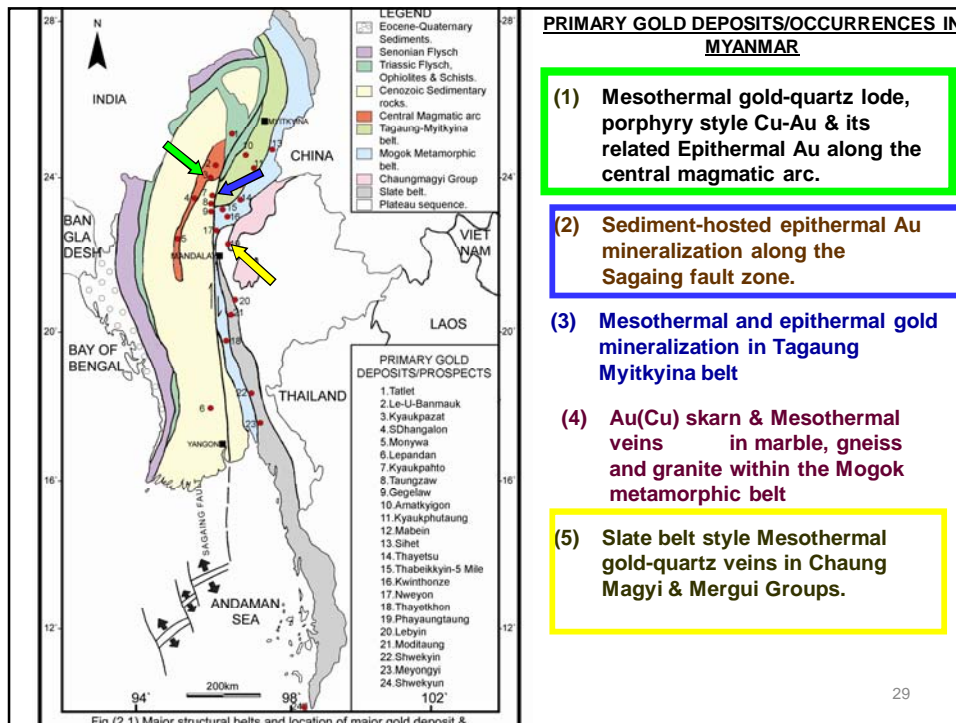


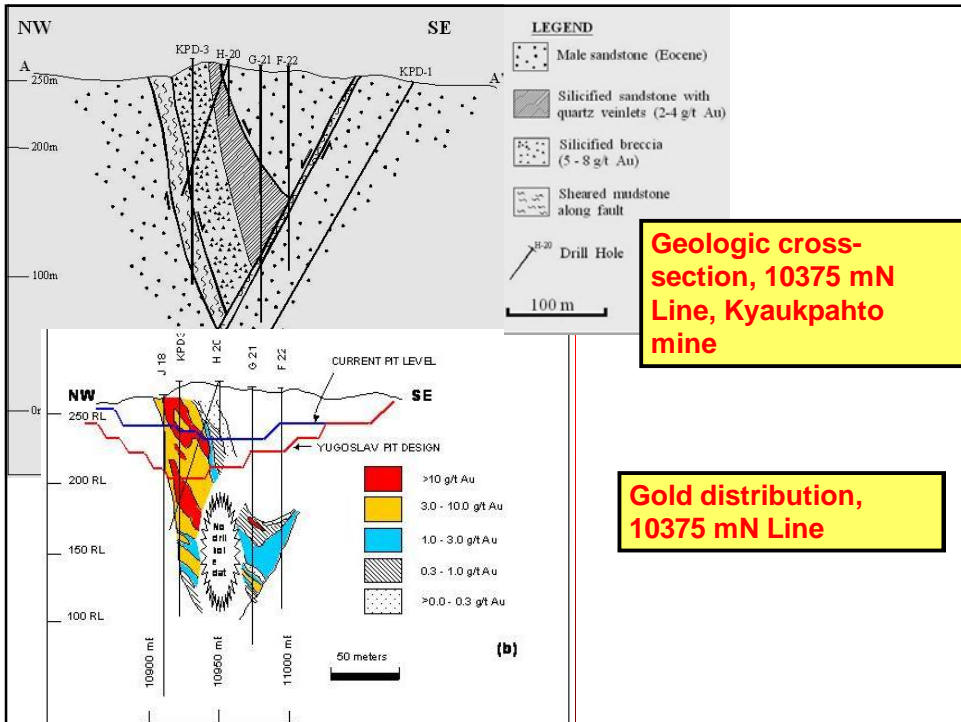
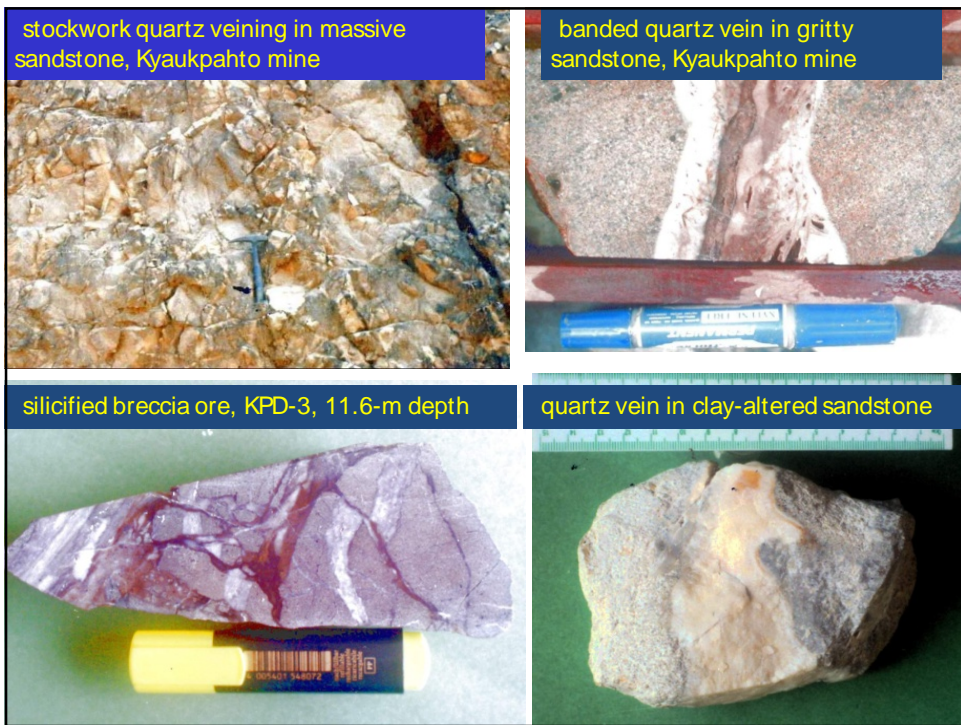




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Moditaung gold mine

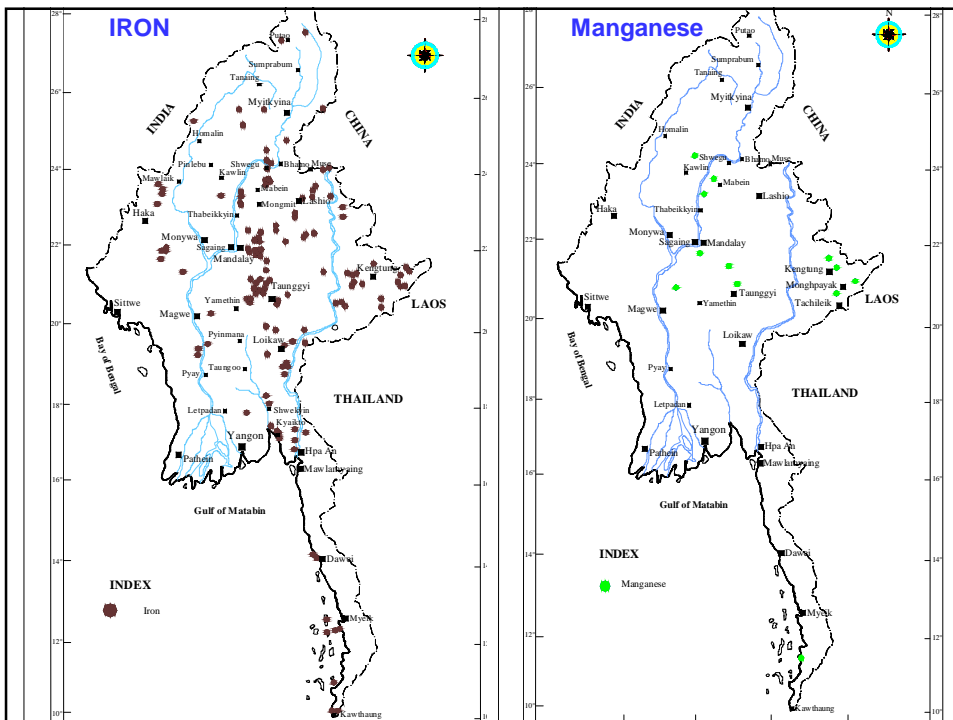


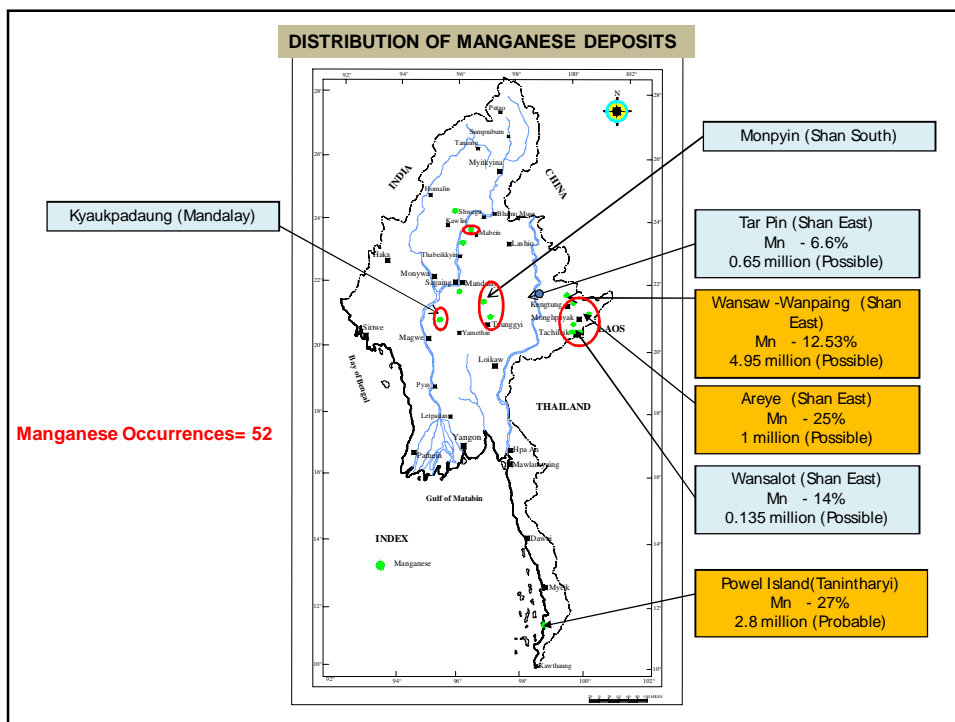
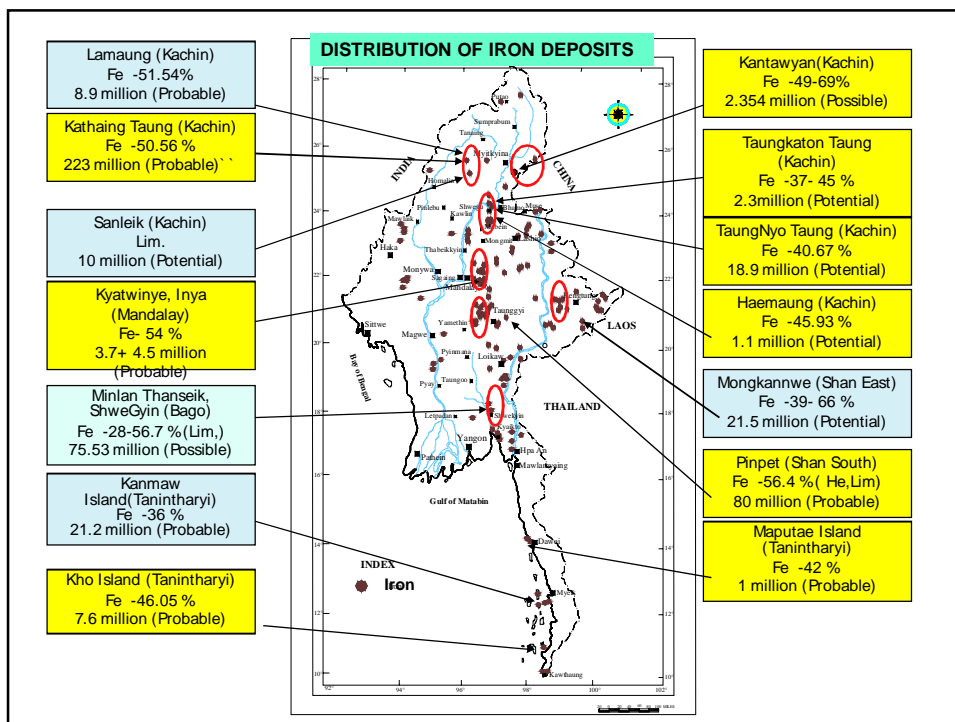
laminated book & ribbon vein. 77cm@122 to 575g/t below oxide zone. Htongyi Taung 950m level

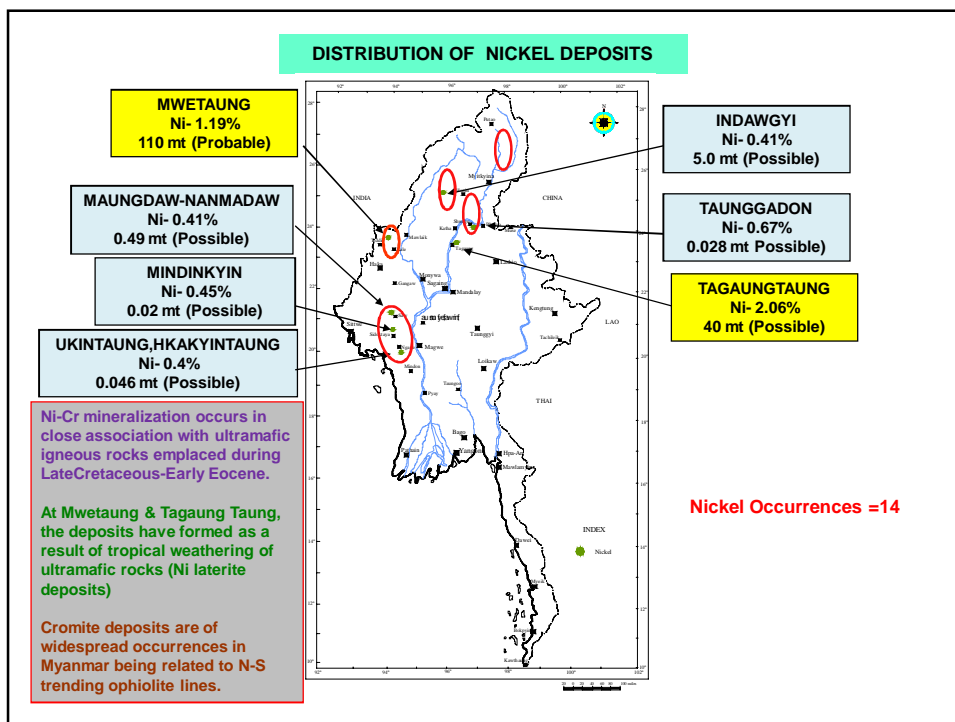
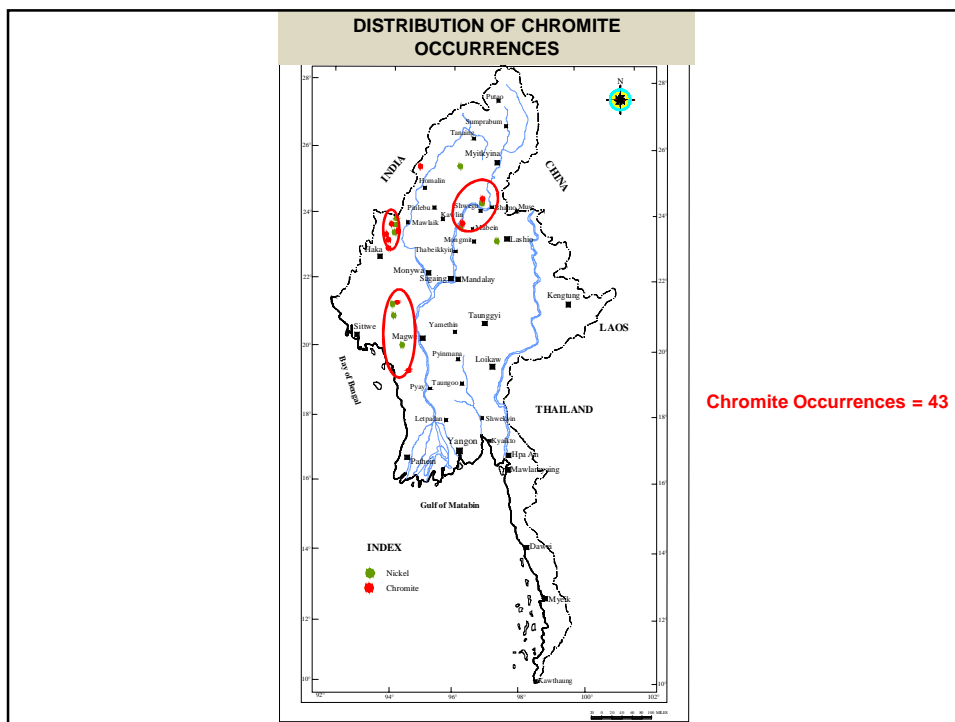
Segment of Au-bearing quartz vein on 950m level at Htongyi Taung, 40cm@11 g/t, looking SE.




- Coarse visible gold commonly present in veins assaying over 30g/t Au
- Gold not encapsulated in pyrite.
- Gold is frequently observed in hand specimens in both the oxide and sulphide zones.










Tagaung Nickel Project



Processing Plant



Nickel laterite mine site

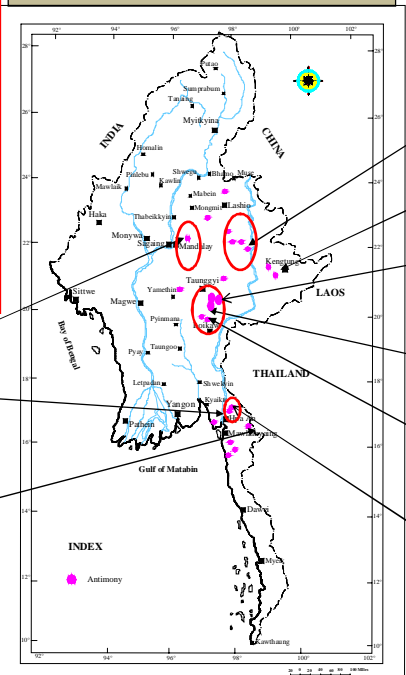
TAGAUNGTUNG
Ni- 2.06%
40 mt (Possible)

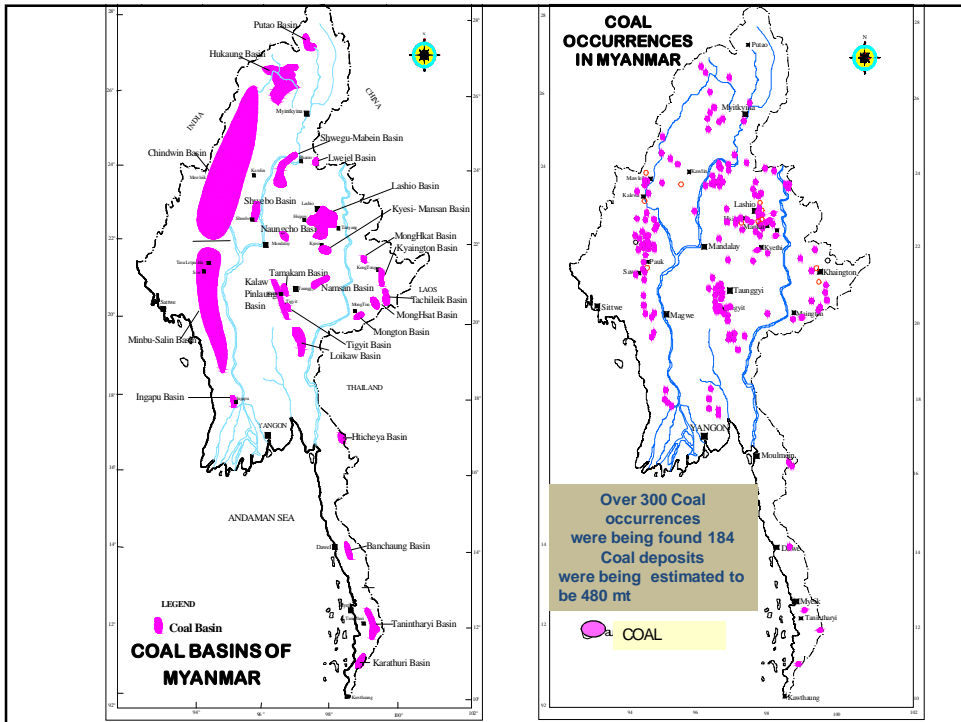
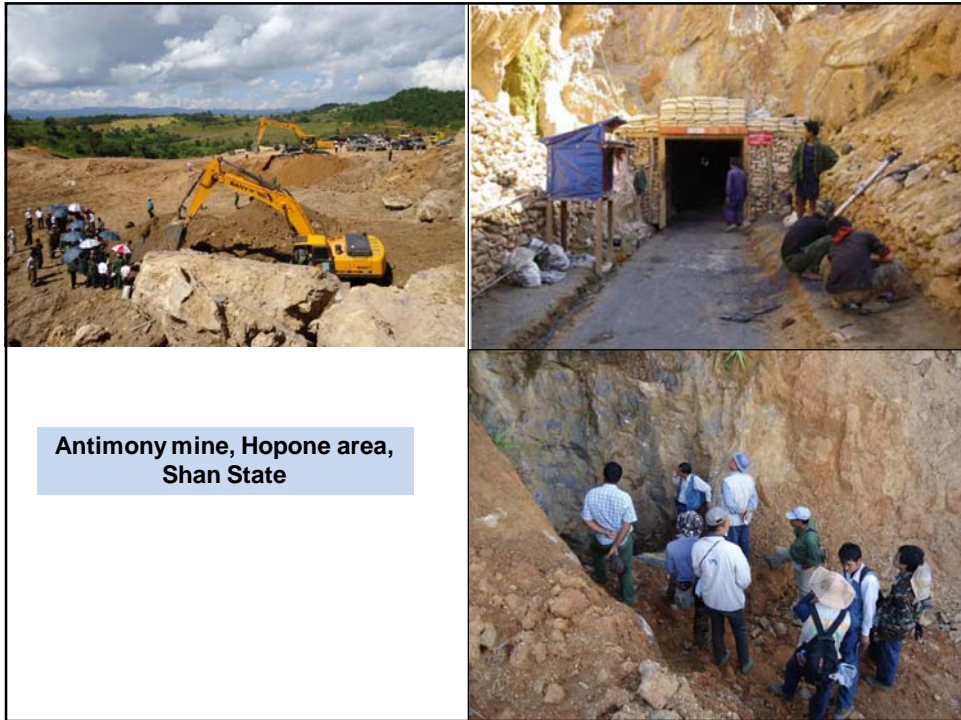
**Resource estimation-
40 mt with ~ 2.0 % Ni**

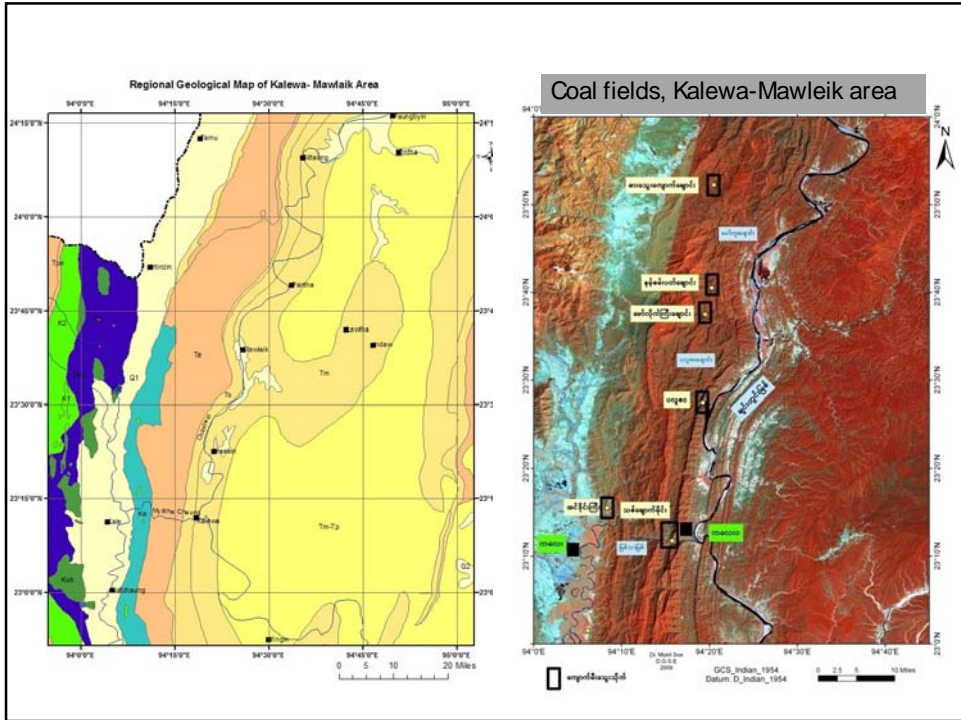
Antimony deposits

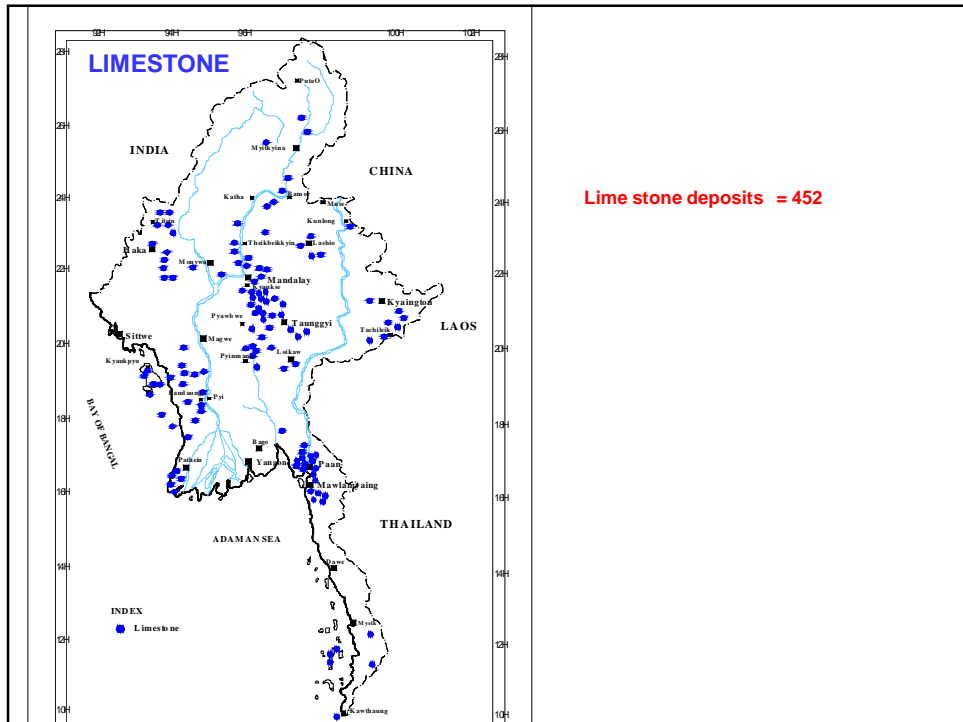
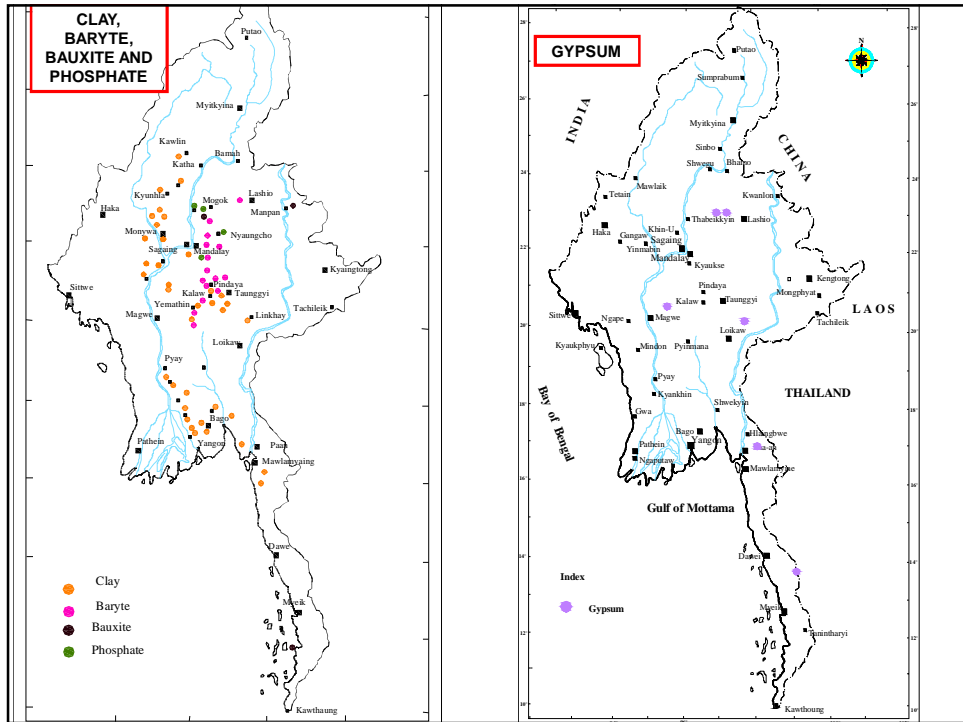
- More than 140 occurrences of stibnite and other sb-bearing minerals are known in Myanmar.
- The majority of antimony mineralization occurs in the late Paleozoic carbonates (Triassic to Permian in age) & also in the late Pleozoic clastic sediments of the Mergui series.
- generally found in veins or lenses, or both.
- So far, the best known antimony deposit s are at Thabyu, Kayin State, near Thai Border. The ore is reported to be of high grade.

DISTRIBUTION OF ANTIMONY DEPOSITS









Gemstones of Myanmar

Jade Mine area

Amber

Mogok Ruby, Sapphire

Mongshu Ruby

Shan-Thai Block

Western Ranges

Central Cretaceous Belt

Rakhine Coastal Strip

504.5cts ruby

Mogok gemstone tract : Ruby, sapphire and spinel occur as primary minerals in marble, calc-silicates and as well as obtained from placers in eluvial and alluvial sediments.

Jade mine area: Jadeite-albite dykes and veins intruded into serpentinite bodies at the Tawmaw- Lonkin area,

Burmese amber (Burmite): The major occurrences are located in the Hukwng valley -

-other ruby occurrences are Nayaseik and Pyinlon.

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RUBY, Mid. Year Emporium, 2011



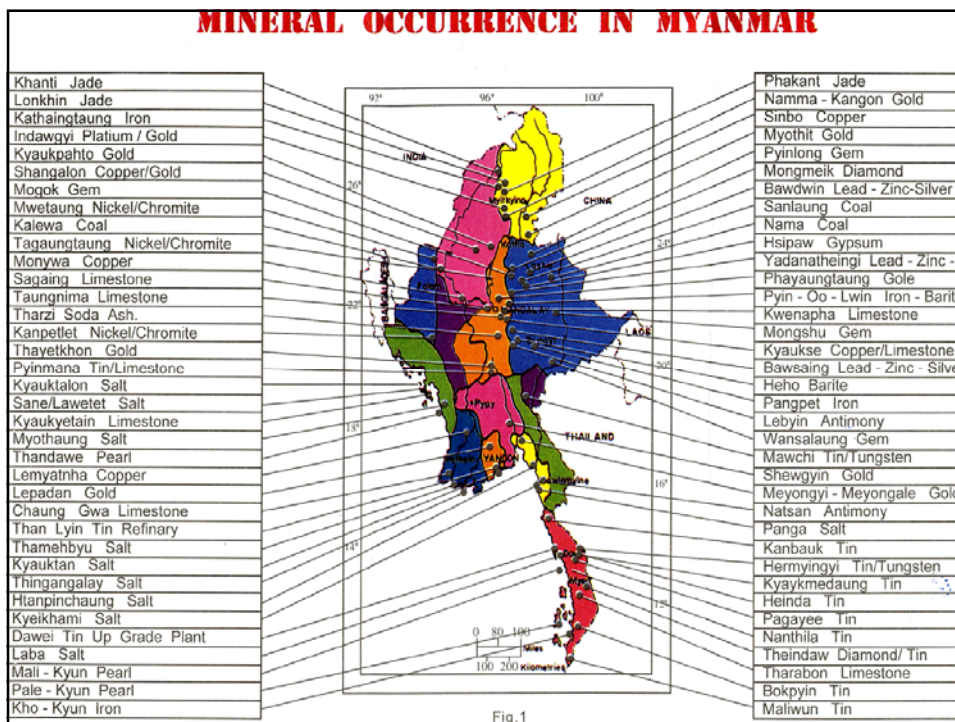


Assorted Gemstones from Mogok Area

Sapphire from Mogok Gemstone Tract



2013/2/18



MINERAL POLICY

- ❖ To boost up present production
- ❖ To invite participation in terms of technical know-how and investment from sources within the country and abroad
- ❖ to fulfill the domestic requirements and to increase export by producing more mineral products;

Conclusion

Myanmar - within the complex tectonic zone of active oblique convergent between Asian and Indian plates exhibits the great diversity of geology, Physiography, structural deformation and as well as episodic mineralization events and various mineral commodities.

The mineral resources include Sn-W, base metals to precious to rare metals, industrial raw minerals, jade & gemstones, and as well as coal, oil & gas. But most of them are needed to be explored and proved systematically.

We hope there'll be more cooperation between Myanmar and Your Country in the near future.

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Thank You

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