

STATE REVIEWS



Indian Minerals Yearbook 2013 (Part- I)

52nd Edition

**STATE REVIEWS
(Sikkim)**

(FINAL RELEASE)

**GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES**

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SIKKIM

Mineral Resources

The important mineral resources of the State are **copper-lead-zinc** and **silver** reported in Bhotang, Rangpo and Dikchu in East Sikkim district. Occurrences of other minerals reported in the State include **dolomite**, **quartzite** and **talc/steatite/soapstone** in West Sikkim district; **limestone** in North Sikkim district and **marble** in East Sikkim and North Sikkim districts (Table -1).

Production

No mineral production (except minor minerals) was reported in 2012-13. The production value of minor minerals was estimated at ₹188 lakh for the year 2012-13.

Exploration & Development

Details of exploration activities conducted by GSI are furnished in Table-2.

Mineral-based Industry

SMC, a joint venture of Government of Sikkim and Government of India, was established for the purpose of development of Bhotang polymetal ore deposit at Rangpo. The copper, lead and zinc concentrates produced after treatment of ores at its beneficiation plant at Rangpo are sold to HCL, Ghatsila and HZL, Visakhapatnam for processing. The trials carried out by HZL for the utilisation of SMC's lead concentrates have not been successful. The lead concentrates remained unsold due to high bismuth content and presence of other impurities. A talc/silica powder unit is reported to be working in East Sikkim district. The Sikkim Mining Corp. is also reportedly involved in exploitation of lower Pacheykhani Copper deposit, to supplement production of concentrates in its Bhotang mine. Sikkim's Mines & Geology Department has set up a pilot dimension rock cutting unit and pilot lime making unit to ascertain the feasibility of setting up of commercial lime plant and dimension rock cutting plant in the State. A ferro alloys plant, namely, Akshay Ispat & Ferro Alloys Ltd with an installed capacity of 6,000 tpy is located at Mamring, South Sikkim district.

Table – 2 : Details of Exploration Activities in Sikkim, 2012-13

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI Chromite East	Dikchi basemetal prospect	1: 12,500	75.0	-	-	-	Reconnaissance stage investigation (G-4) was carried to assess the basemetal and gold prospect which includes all areas of visible sulphide occurrences. An area of 75 sq. km. (Lat. N 27°20'30"- N 27°25'00" and Long. E 88°30'00"- E 88°40'00") was mapped in the southern part of the investigated area. The rocks exposed in the area belong to Central Crystalline Gneissic Complex (CCGC), Daling Group, Lingtse Granite Gneiss and basic intrusive. The litho units present are phyllite with interbands of fine grained quartzite, Lingtse streaky granite gneiss, mylonite, chlorite schist/phyllite, quartz-biotite schist, garnetiferous-quartz-biotite schist and Banded gneiss. The Basemetal mineralisation in the south and north of Dikchu River occurs as poor to moderate impersistent pockets, lenses, veins and fracture fillings. Three different mineralised zones have been identified: 1) Bakchechu-Rethechu confluence-Phodong (Cu values range from 3637 ppm to 15600 ppm), 2) Nampung - 4th mile Pangthang (Cu values ranges from 206 ppm to 5600 ppm) and 3) Nabey - Luying (Cu ranging from 364 ppm to 16,260 ppm). The investigation has been completed.

Table – 1: Reserves/Resources of Minerals as on 1-04-2010 : Sikkim

Mineral	Unit	Reserves										Total resources (A+B)							
		Proved		Probable		Total Feasibility		Pre-feasibility		Measured			Indicated		Inferred		Reconnaissance		Total (B)
		STD 111	STD 112	STD 121	STD 122	STD 211	STD 211	STD 211	STD 221	STD 222	STD 331		STD 332	STD 333	STD 334	STD 333	STD 334		
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Copper																			
Ore	000 tonnes	-	-	8	-	8	-	437	63	300	-	150	-	950	958				
Metal	000 tonnes	-	0.09	-	0.09	-	7.77	0.91	8.47	-	4.23	-	21.38	21.47					
Dolomite	000 tonnes	-	-	-	-	-	-	-	-	-	-	2756	-	2756	2756				
Lead-Zinc																			
Ore	000 tonnes	-	436	64	500	-	-	-	300	-	150	-	450	950					
Lead metal	000 tonnes	-	6.9	1.68	8.58	-	-	-	-	-	-	-	-	8.58					
Zinc metal	000 tonnes	-	12.88	3.14	16.02	-	-	-	3	-	1.05	-	4.05	20.07					
Limestone	000 tonnes	-	-	-	-	-	-	-	-	-	2380	-	2380	2380					
Marble	000 tonnes	-	-	-	-	-	-	-	-	-	2382	-	2382	2382					
Quartzite	000 tonnes	-	-	-	-	-	-	-	-	675	16444	-	17119	17119					
Silver																			
Ore	tonne	-	435843	63780	499623	-	-	-	300000	-	150000	-	450000	949623					
Metal	tonne	-	15.25	0.04	15.29	-	-	-	27.6	-	13.8	-	41.4	56.69					
Talc/steatite/soapstone	000 tonnes	-	-	-	-	-	-	-	60	-	-	-	60	60					

Figures rounded off.

