

Penanganan Bahan Padat

S1 Teknik Kimia FT UNS

1. Pendahuluan:

Potensi mineral di Indonesia.

Sperisa Distantina

Table 2: Mining production of Indonesia

Minerals	Unit	1997	1998	1999	2000
Coal	tons	54,603,396	60,320,951.7	64,602,051.1	76,790,185.7
Tin	tonnes	55,174.69	53,959.41	47,753.00	51,629.00
Bauxite	tonnes	793,036	1,055,647	1,116,323	1,150,776
Gold	kg	89,978.65	124,018.69	129,032.05	126,556.55
Silver	kg	279,000.16	348,973.83	292,331.02	305,646.35
Copper Concentrate	tonnes	1,882,776	2,640,040	2,645,180	2,270,538
Nickel Ore	tonnes	2,449,876	3,233,374	3,235,286	3,038,809
Ni in Nickel matte	tonnes	32,000	35,697.4	45,901.3	59,934.10
Ni in Ferronickel	tonnes	9,998.79	8,451.50	9,385.10	10,110.57
Ferronickel (Ingot)	tonnes	-	41,542.59	44,067.60	47,748.10
Iron sand concentrate	tons	469,972	560,524	562,312	489,132

Gold production by PT. Aneka tambang, PT. Freeport (in Cu concentrate), PT. KEM, PT. Indo Muro Kencana, PT. Barisan Tropical Mining and PT. Newmont Minahasa Raya

Silver production by PT. Aneka tambang, PT. Freeport (in Cu concentrate), PT. KEM, PT. Indo Muro Kencana, PT. Barisan Tropical Mining and PT. Newmont Minahasa Raya

Coal production by PT. Bukit Asam and private companies

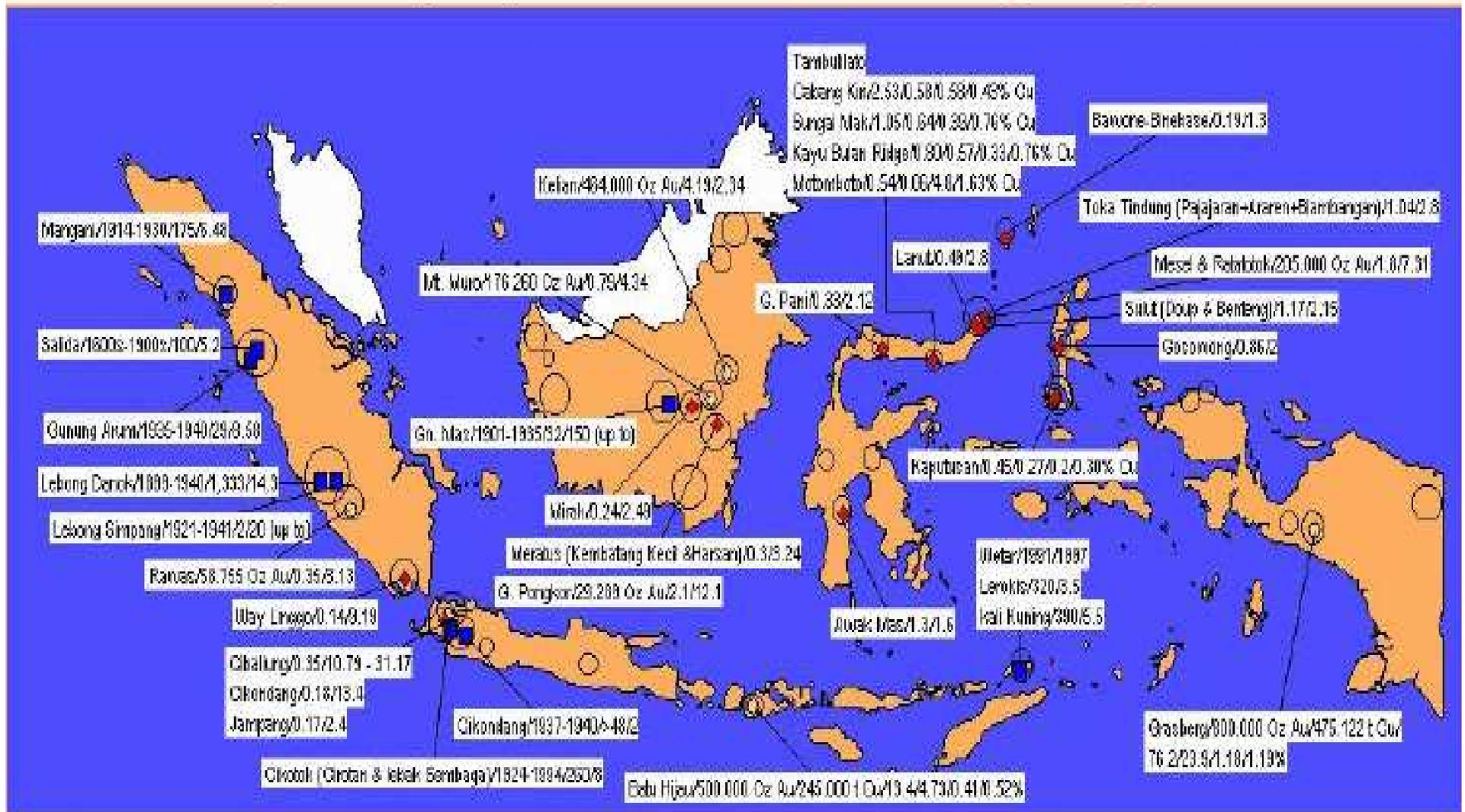
Tin production by PT. Tambang Timah, PT. Koba Tin and Other companies

Nickel ore production by PT. Aneka tambang Pomalaa, P. Gebe and P. Gee

Nickel matte production by PT. INCO

Source : Departement of Energy and Mineral Resources

Fig. 1: Gold-Copper Deposit Occurrences in Their Indonesian Geological Setting



LEGEND:

- Major Prospect (Yellow circle)
- Operating Mine (Red diamond)
- Old Mine (Blue square)
- Gold Zone controlled by Intrusive, Volcanic, Hosted rocks and Tectonics setting (White circle)
- Location Name/Annual production Oz Gold / Reserve, tOz Gold and Mt Cooper / Grade, grade gold / metric tonne (Yellow diamond and Red diamond)
- Location Name/Active period of mining / Approx. past production (Oz gold x 1000) / Grade, gram gold / metric tonne (Blue square)

Industri tambang mineral di Indonesia

1. **PT Newmont Nusa Tenggara (NNT), Batu Hijau copper-gold mine.**
2. **PT. INCO, nickel mine.** The company is owned 58.7 percent by Inco Limited of Canada, 20.1 percent by Sumitomo Metal Mining Co and 20.0 percent by public shareholders. The balance of shares of 1.2 % is owned by four other Japanese companies.
3. **PT Aneka Tambang (Antam)**
PT Aneka Tambang transformed itself from a state owned mining company into a public company through its listing on the Jakarta and Surabaya stock exchanges.

Table 4. Production Highlights of Antam

Description	Unit	2000	1999	1998	1997
Ferronickel Nickel Ore	Ton Ni	10,111	9,221	8,451	9,999
High Grade (Saprolite)	Wmt	2,107,514	2,094,467	2,039,810	1,820,172
Low Grade (Limonite)	Wmt	931,355	1,140,818	1,193,564	1,011,214
Total Nickel Ore	Wmt	3,038,869	3,235,285	3,233,374	2,813,386
Gold	Kg	4,021	2,956	1,569	2,004
Silver	Kg	27,650	21,064	12,392	15,350
Bauxite	Wmt	1,150,776	1,116,323	1,055,647	808,749
Iron Sand	Ton	489,126	584,428	560,524	487,378

4. PT. Freeport Indonesia Company (FIC) In Irian Jaya, PT. Freeport Indonesia Company is facing some social and environmental issues associated with Grasberg.

5. The Indonesian Coal Industry

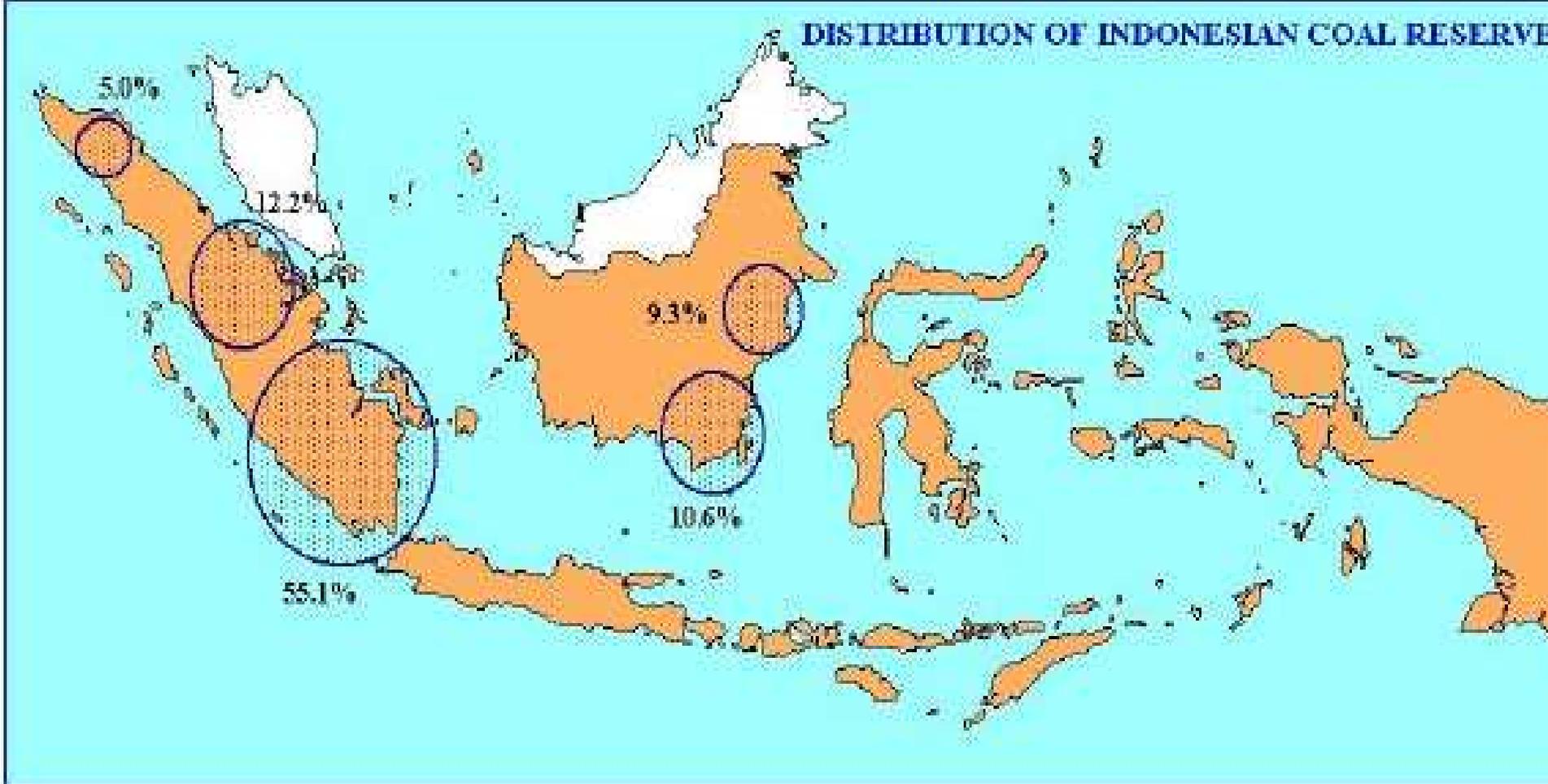
Table 7: Coal qualities, five largest Indonesian coal producers

	Kaltim Prima Coal (a)	PT. Adaro (b)	PTBA (state company) (c)	PT Arutmin (d)	PT Kideco (e)
Production (Mt)	13.97	13.60	11.21	8.65	7.30
Coal rank	bituminous	sub-bituminous	sub-bituminous	sub-bituminous	sub-bituminous
Kcal/kg (gad)	6700	5800	5500	6500	5500
Moisture (%) (ar)	12	25	23	9	21
Ash (%) (ad)	5	1	8	12	2
Volatiles (%) (ad)	39	40	38	40	42
Sulfur (%) (ad)	0.6	0.1	0.6	0.7	0.2
HGI	47	48	50	38	50

- (a) Simple average of Prima and Pinang reserves
- (b) Tutupan (reserves 570 million tonnes)
- (c) There is a wide range of coal qualities (Tanjung Enim)
- (d) Washed coal
- (e) Simple average of North and South Roto reserves.

Source: C. Johnson, APEC Experts Group 1998, Swabara, APBI 1999

DISTRIBUTION OF INDONESIAN COAL RESERVE



Newmont



The current situation of Indonesian mining resources are:

- **Coal** resources estimated around 61.3 billion tons with mine able reserve approximately 6.9 billion tons (15th rank of world coal reserve)
- **Gold** resources estimated around 6,369 tons with mine able reserve approximately 3,254 tons (7th rank of world gold reserve)
- **Copper** resources estimated around 68.11 million tons with mine able reserve approximately 31.85 million tons (7th rank of world copper reserve)
- **Tin** resources estimated around 0.622 million tons with mine able reserve approximately 0.462 million tons (5th rank of world tin reserve)
- **Nickel ore** resources estimated around 1,412 million tons with mine able reserve approximately 485.33 million tons (8th rank of world nickel reserve)

Compared with other countries of Asia from Kazakhstan to Philippines, Indonesia is still a leader in copper, gold, silver, nickel and coal resources and production.

Industri Semen di Indonesia



No	Nama	Lokasi
1	PT. Semen Andalas Indonesia	Lok nga, Nanggroe Aceh Darussalam
2	PT. Semen Padang	Indarung , Sumatera Barat
3	PT. Semen Baturaja	- Baturaja, SumSel, - Palembang, SumSel, - Panjang, Lampung
4	PT. Indocement Tunggul Prakarsa, Tbk.	Citeureup, Jawa Barat, - Palimanan, Jawa Barat , - Tarjun, KalSel
5	PT Holcim Indonesia	Narogong, Jawa Barat, - Cilacap , Jawa Tengah.
6	PT. Semen Gresik, Tbk.	Gresik, Jawa Timur, - Tuban, Jawa Timur.
7	PT. Semen Tonasa	Pangkep, SulSel.
8	PT. Semen Bosowa Maros	Maros, SulSel.
9	PT. Semen Kupang	Kupang, NTT.