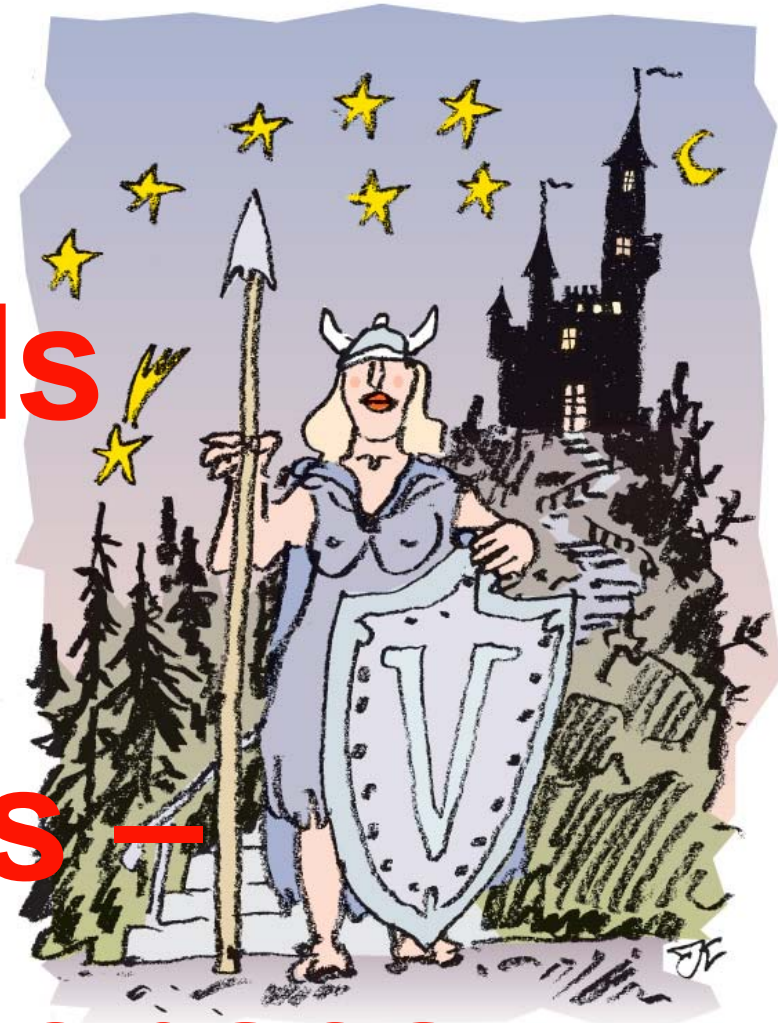


Bergforsk

Luleå 24th May 2007

Current trends in global metal markets – industry responses



Vanadium drawing: Kalanders Sempler.

Magnus Ericsson

**Raw
Materials
Group**

Ein nutzlich bergbuchleyn



Title page of first
edition of
Ulrich von Rülein's
"Ein nutzlich
bergbuchleyn"
Calw c. 1500



AGENDA

- **METALS DEMAND**
- **GLOBAL MINING –
STAKEHOLDER RESPONSES**
- **EXPLORATION & INVESTMENTS**
- **THE BALTIC MINING CLUSTER**
- **CONCLUSIONS**



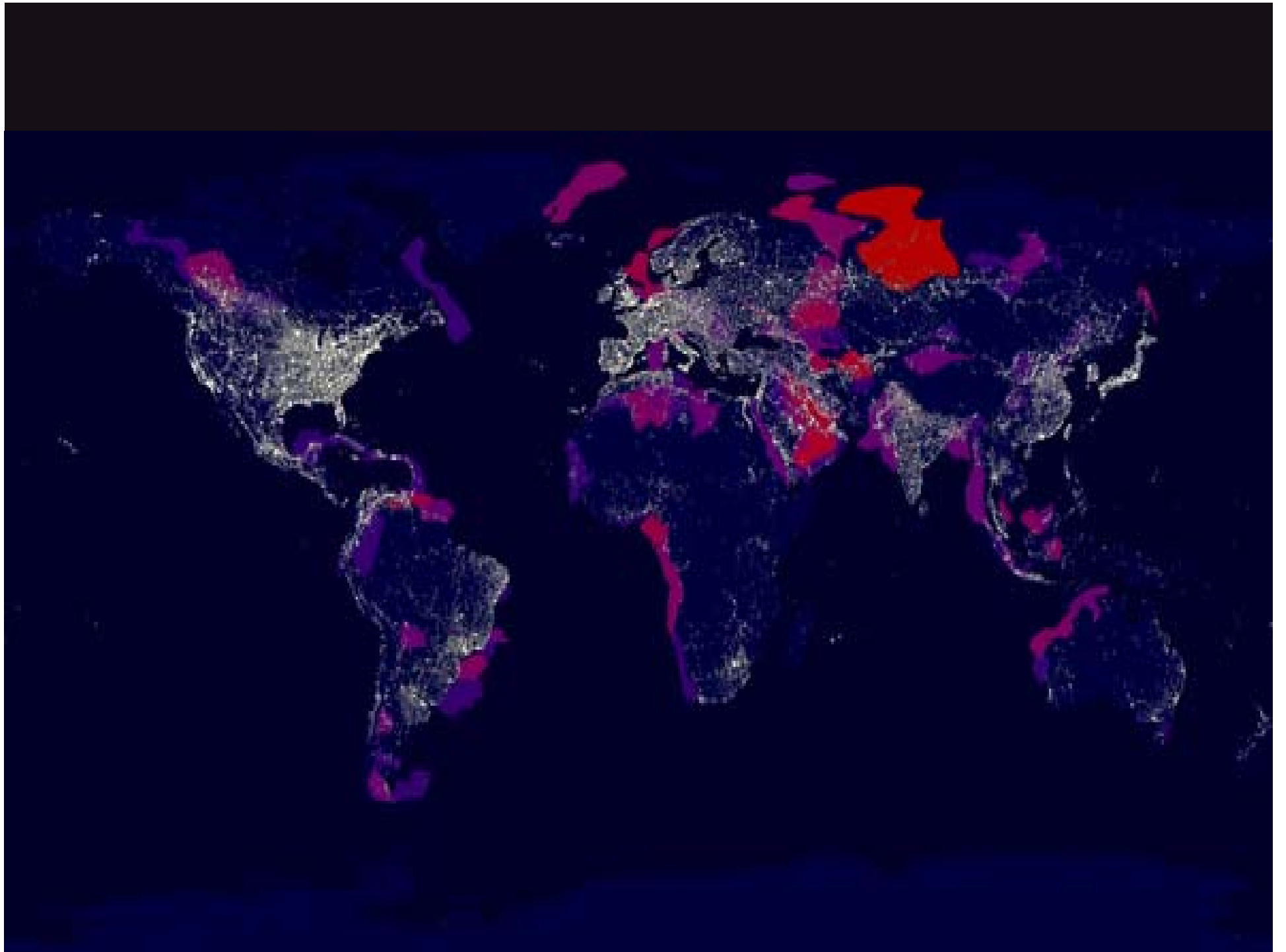
DEMAND



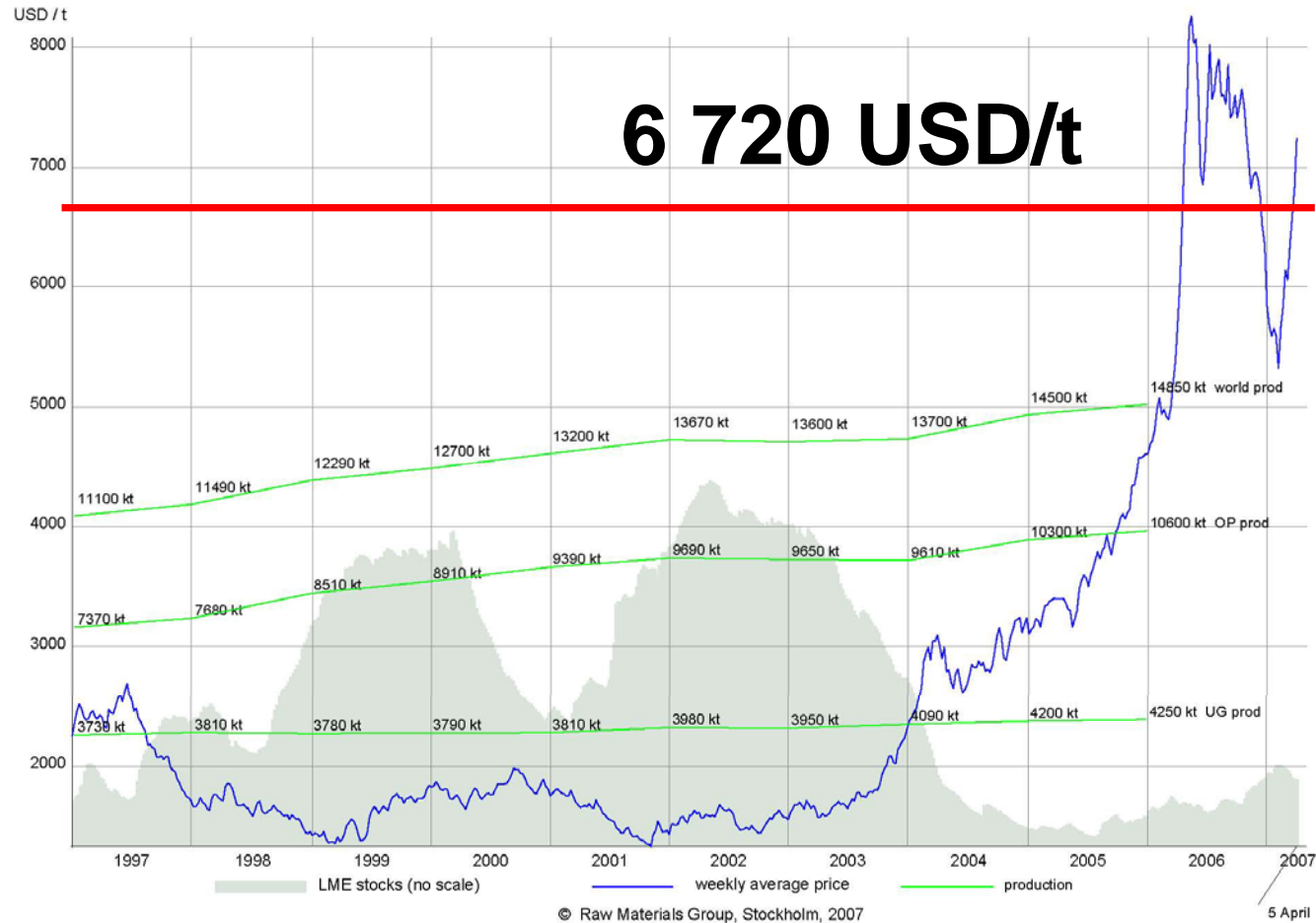
REM drawing: Kaianders Sempler.



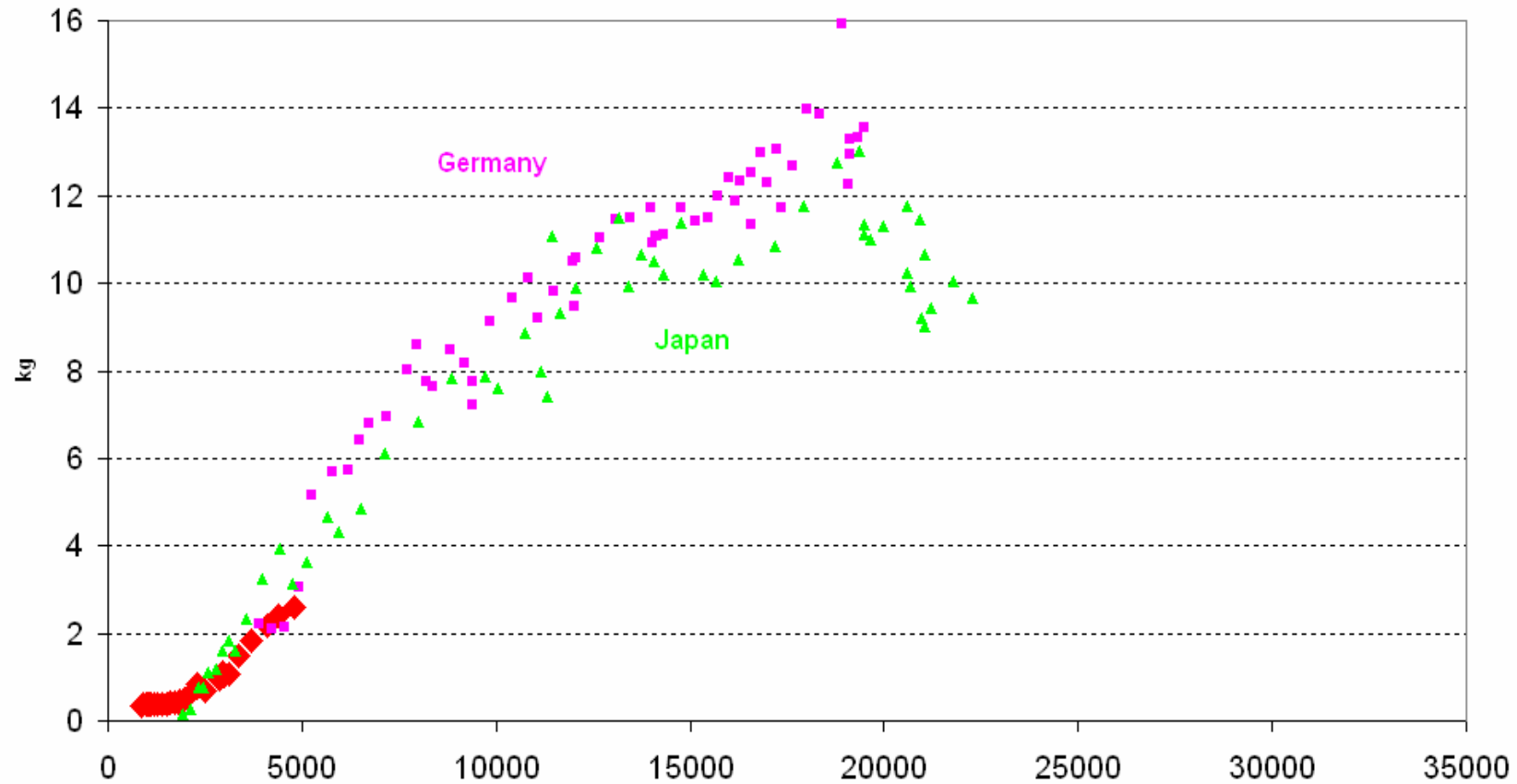
**Raw
Materials
Group**



COPPER PRICES 2007



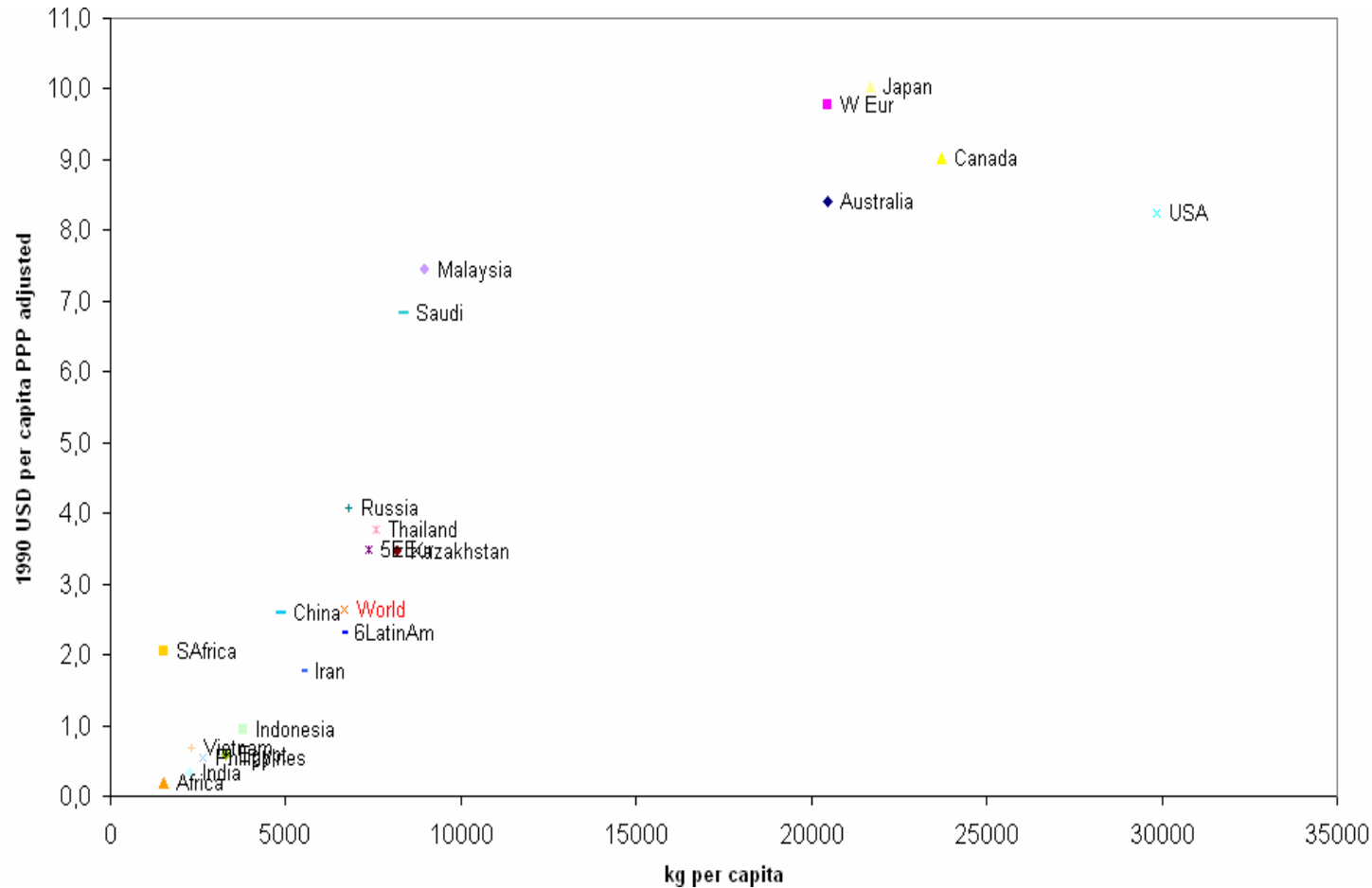
COPPER USE vs GDP/capita



Source: Haggström Ericsson, Handelsbanken 2006. (USD PPP, 2006)



2004 COPPER USE vs GDP



Source: Häggström Ericsson , Handelsbanken 2006.

DEMAND

- **Extended period of growth.**
- **China, India engines but East Europe, CIS also strong.**
- **Infrastructural investments & personal consumption.**
- **No signs of weakening BUT it will come to end.**





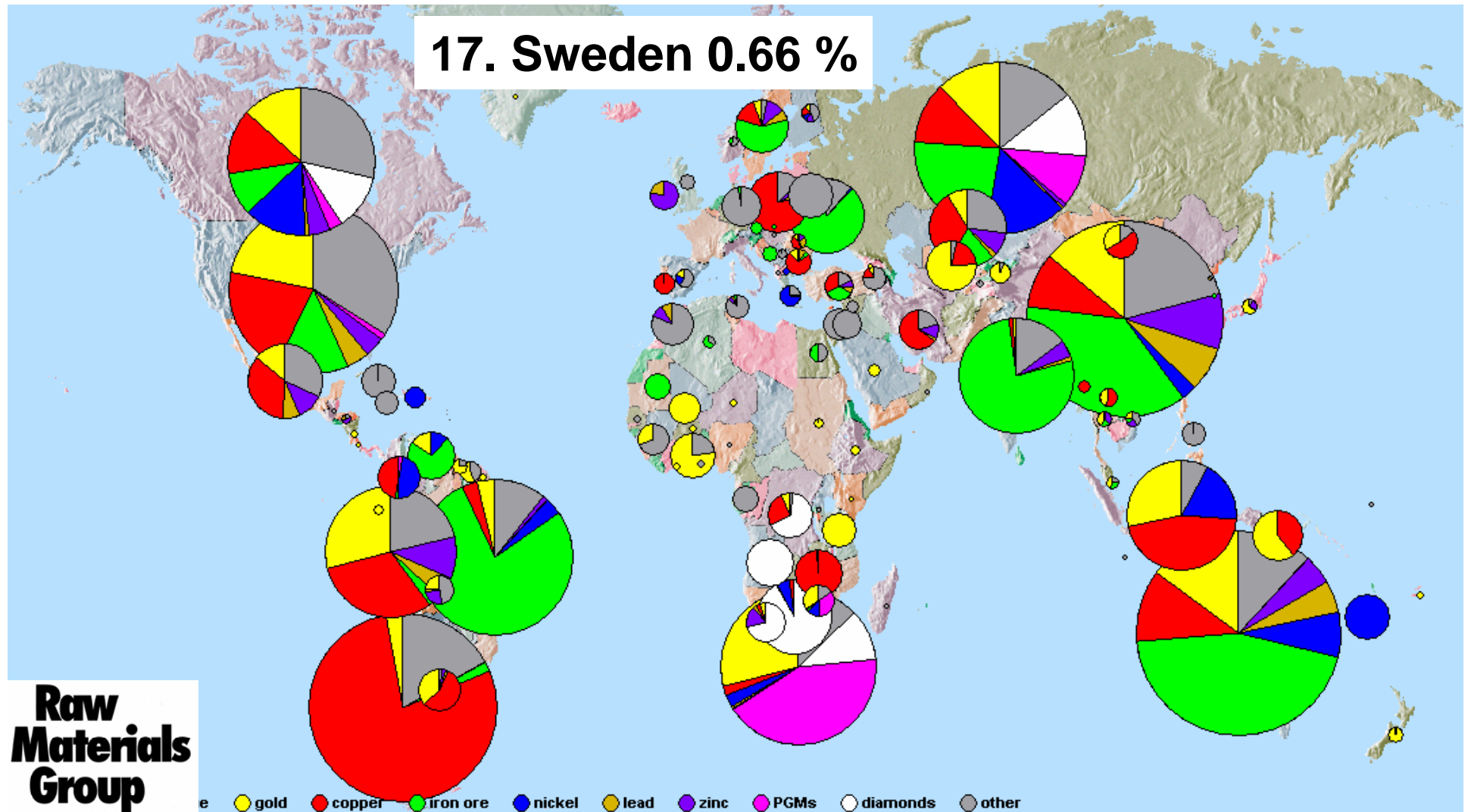
GLOBAL MINING-STAKEHOLDER RESPONSES

Nickel drawing: Kaianders Sempler.



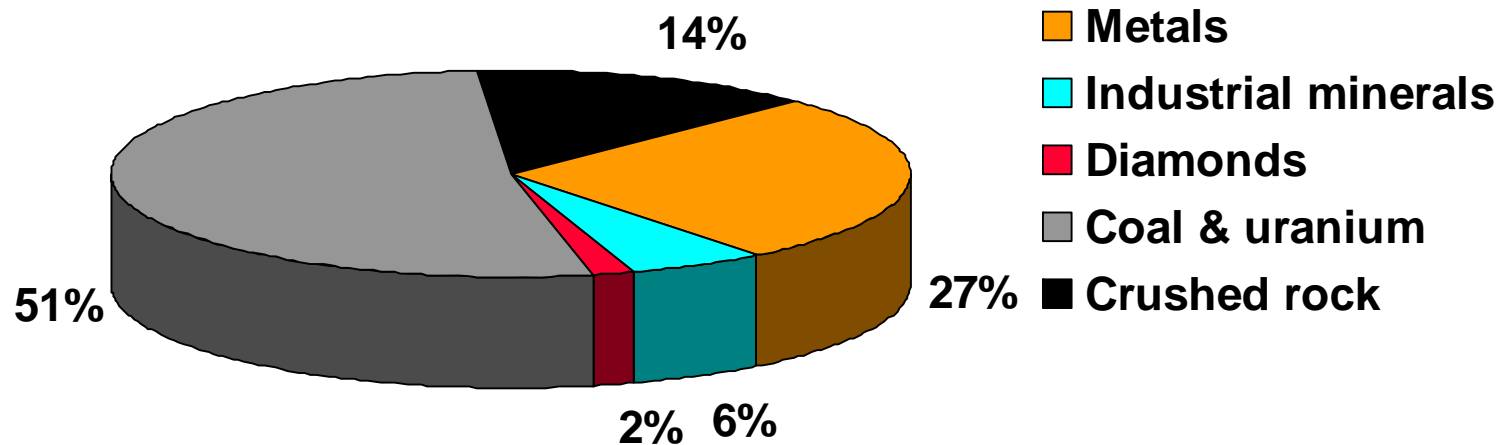
**Raw
Materials
Group**

GLOBAL MINING - GEOGRAPHY



VALUE OF WORLD MINING

YEAR 2005 TOTAL ~ 910 billion USD

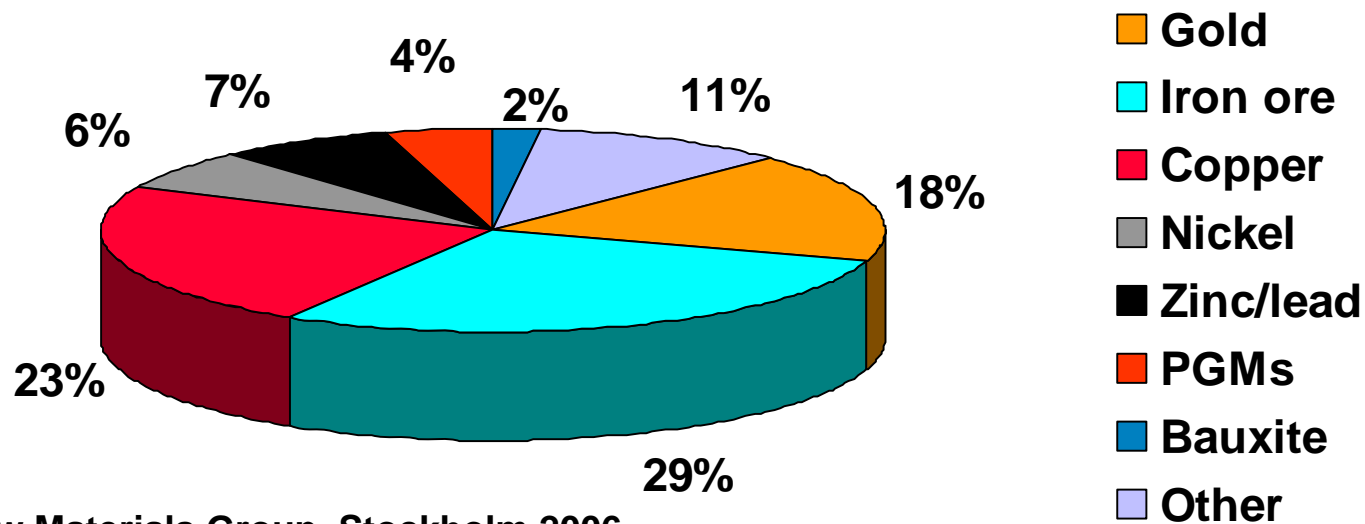


Source: Raw Materials Group, Stockholm 2006.



METALS VALUE AT MINE

YEAR 2005 TOTAL ~ 250 billion USD

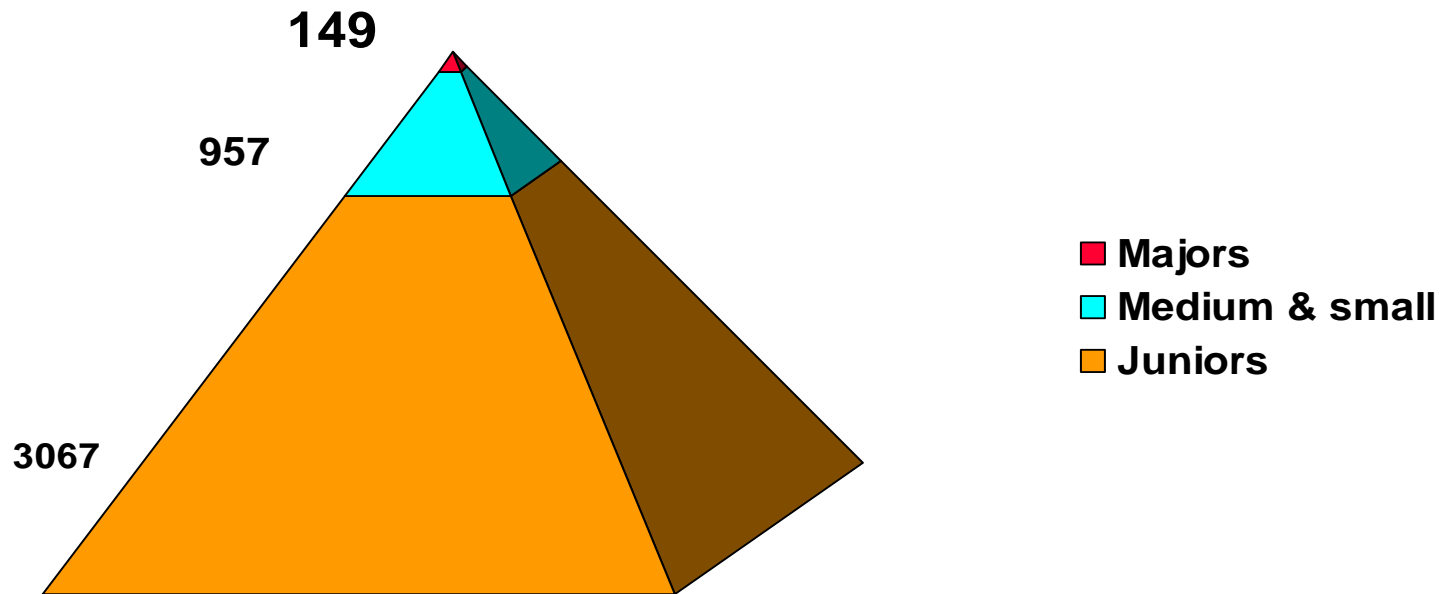


Source: Raw Materials Group, Stockholm 2006.



MINING COMPANIES

Total 4 100 companies

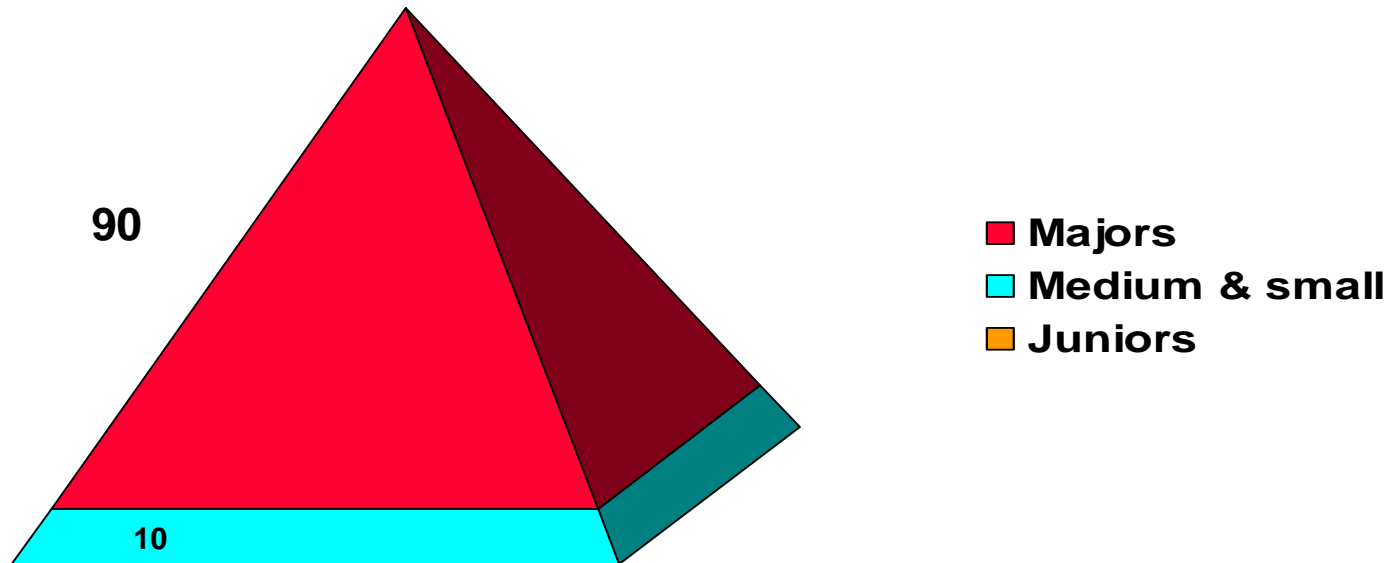


Source: Raw Materials Data, Stockholm 2006.



CONTROL OF MINING

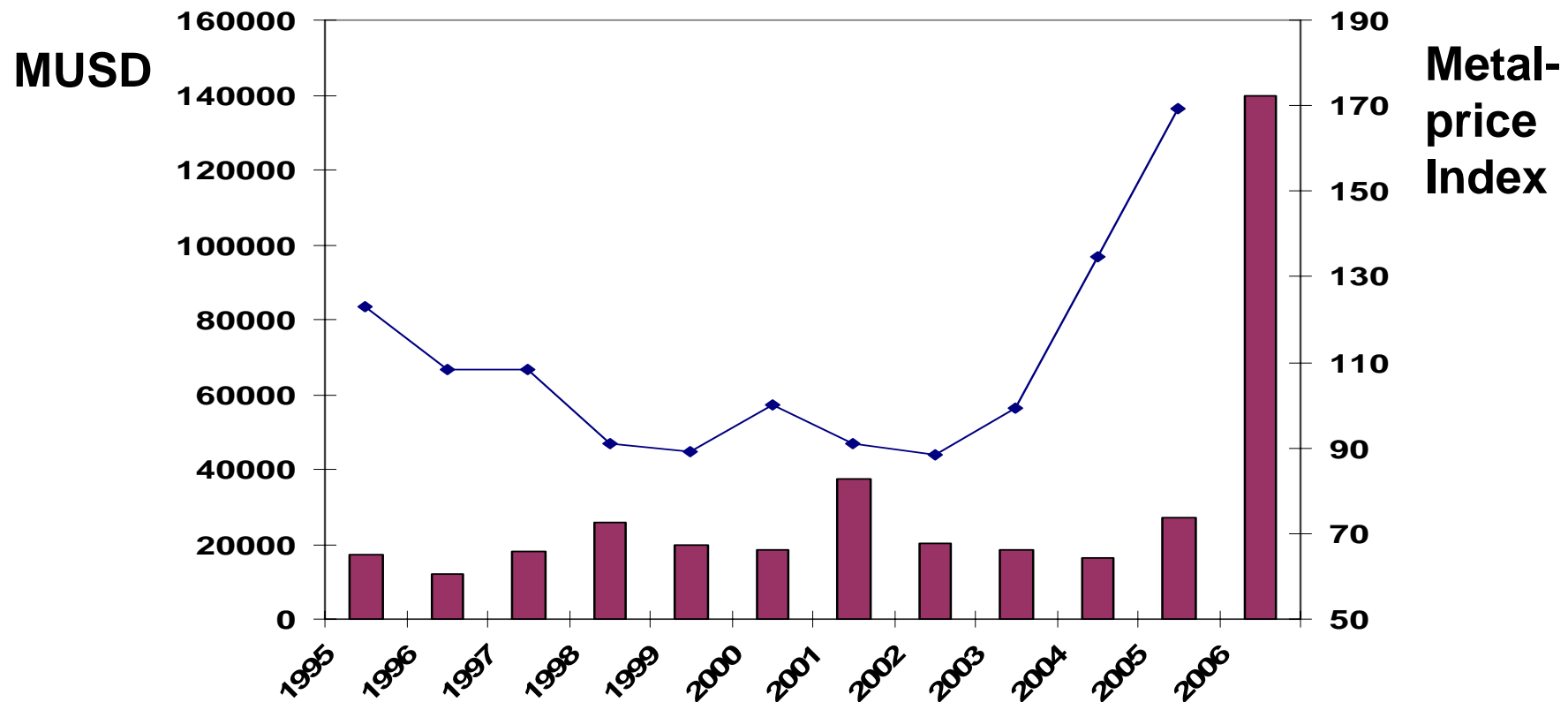
Metals total 250 billion USD



Source: Raw Materials Data, Stockholm 2006.



M&A vs METAL PRICES



Source: Raw Materials Group, Stockholm 2007.



RMG TOP COMPANIES 2005

Metals & Coal

Controlling company	Country	Share of value of mine production (%)	Cumulative value (%)
1 Rio Tinto	UK	3.5	3.5
2 BHP Billiton	Australia	3.2	6.8
3 Anglo American	UK	2.9	9.7
4 State of India	India	2.8	12.5
5 CVRD	Brazil	1.9	14.4
6 Peabody Energy	USA	1.9	16.2
7 Codelco	Chile	1.4	17.6
8 State of Poland	Poland	1.3	18.9
19	Sweden	0.6	
~50	Sweden	0.3	
	Sweden	0.2	
	Sweden/Canada	0.1	



RMG TOP COMPANIES

Metals & Coal

Controlling company	Country	Share of value of mine production (%)	Cumulative value (%)
1 Rio Tinto	UK	3.5	3.5
2 BHP Billiton	Australia	3.2	6.8
3 Anglo American	UK	2.9	9.7
4 State of India	India	2.8	12.5
5 CVRD	Brazil	1.9	14.4
6 Peabody Energy	USA	1.9	16.2
7 Codelco	Chile	1.4	17.6
8 State of Poland	Poland	1.3	18.9
19 Vattenfall	Sweden	0.6	
~50 LKAB	Sweden	0.3	
Boliden	Sweden	0.2	
Lundin Mining	Sweden/Canada	0.1	



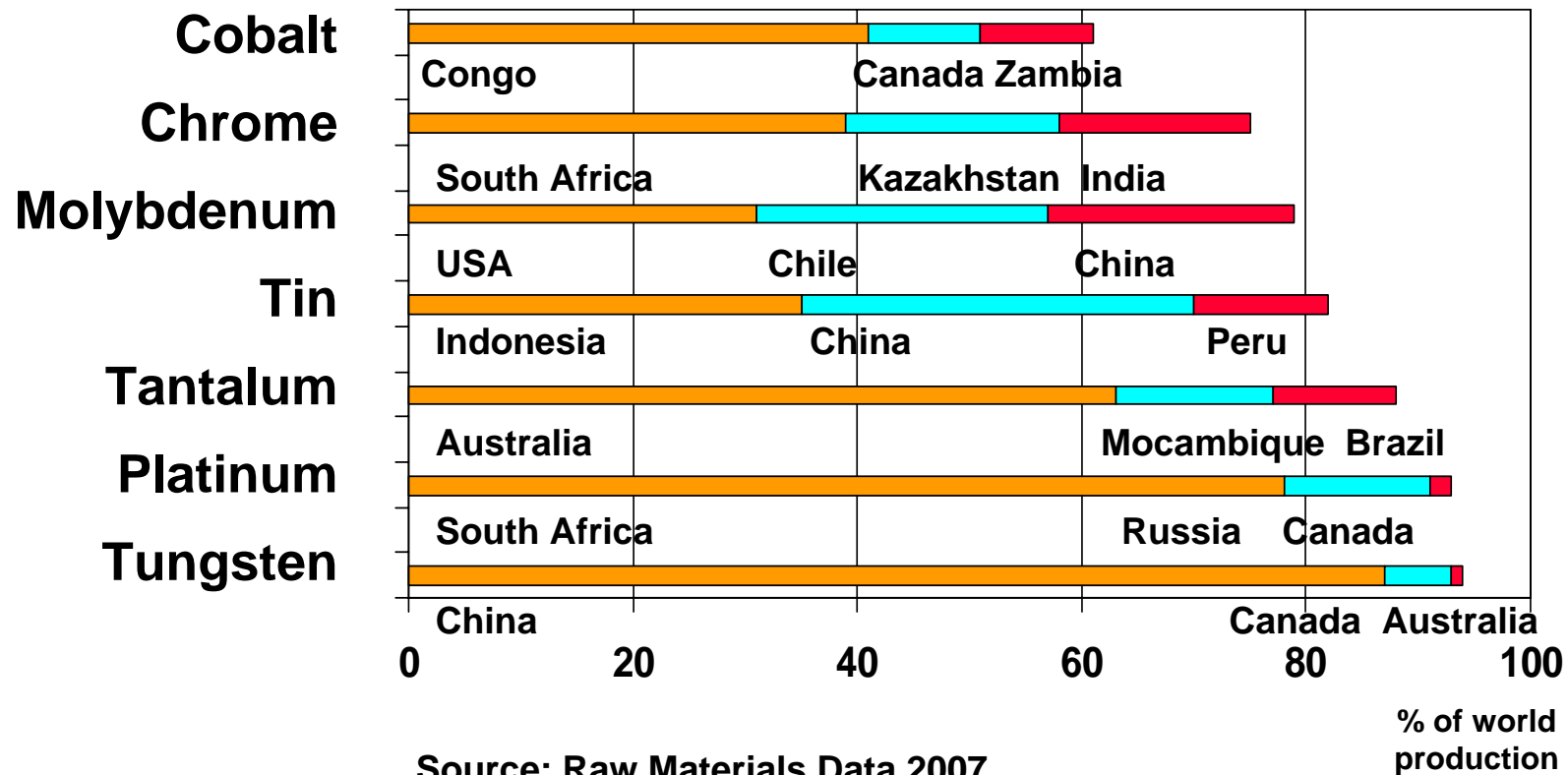
RMG TOP COMPANIES 2006

Metals

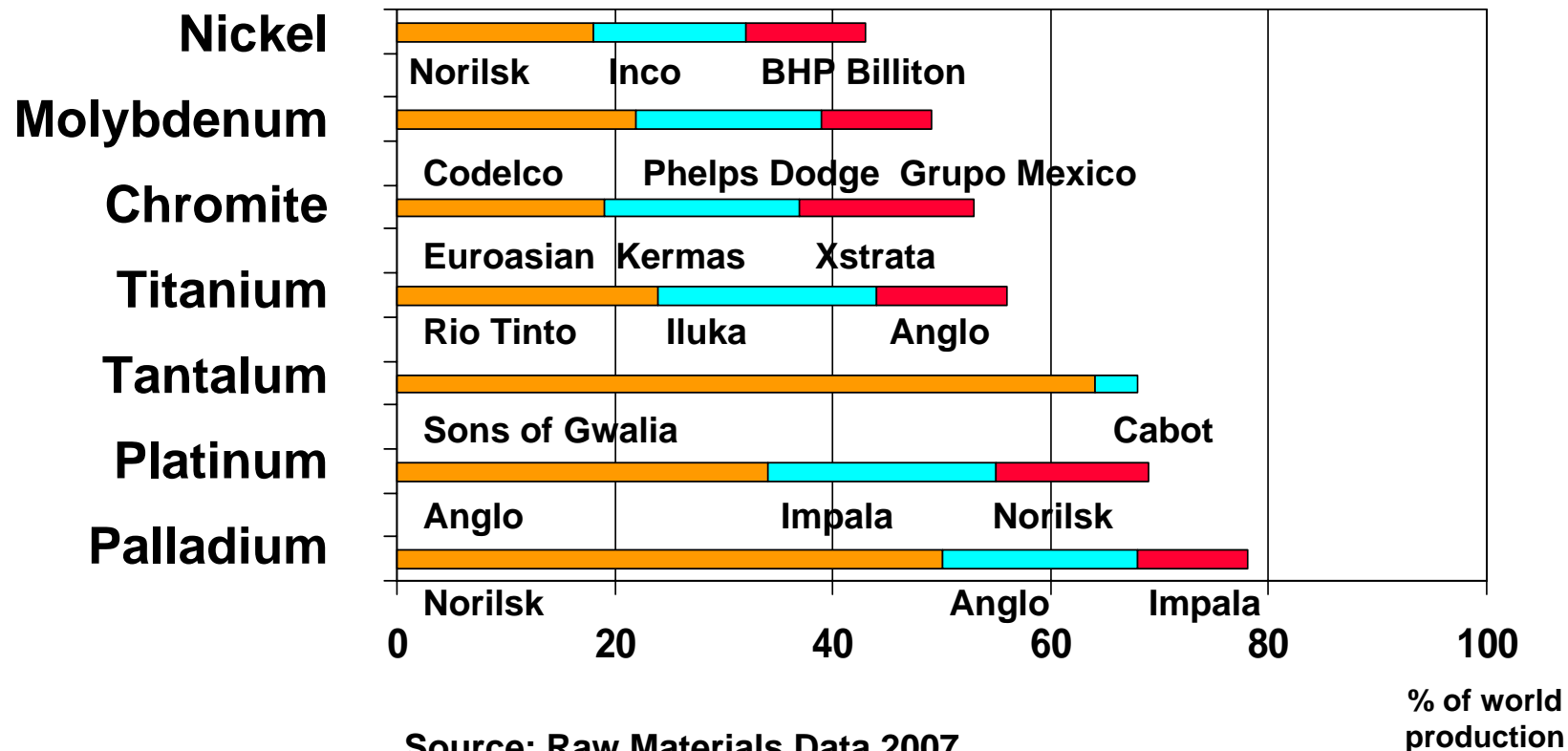
Controlling company	Country	Share of value of mine production (%)	Cumulative value (%)
1 CVRD	Brazil	5.4	5.4
2 Anglo American	UK	5.1	10.5
3 BHP Billiton	Austr.	4.8	15.3
4 Rio Tinto	UK	4.4	19.7
5 Phelps Dodge/Freeport	USA	3.3	23.0
6 Codelco	Chile	3.2	24.2
7 Norilsk Nickel	Russia	2.3	26.5
8 Xstrata/Falconbridge	Canada	2.2	28.7
28 LKAB	Sweden	0.4	
47 Boliden	Sweden	0.3	
55 Lundin Mining	Sweden/Canada	0.2	



GEOGRAPHICAL CONCENTRATION

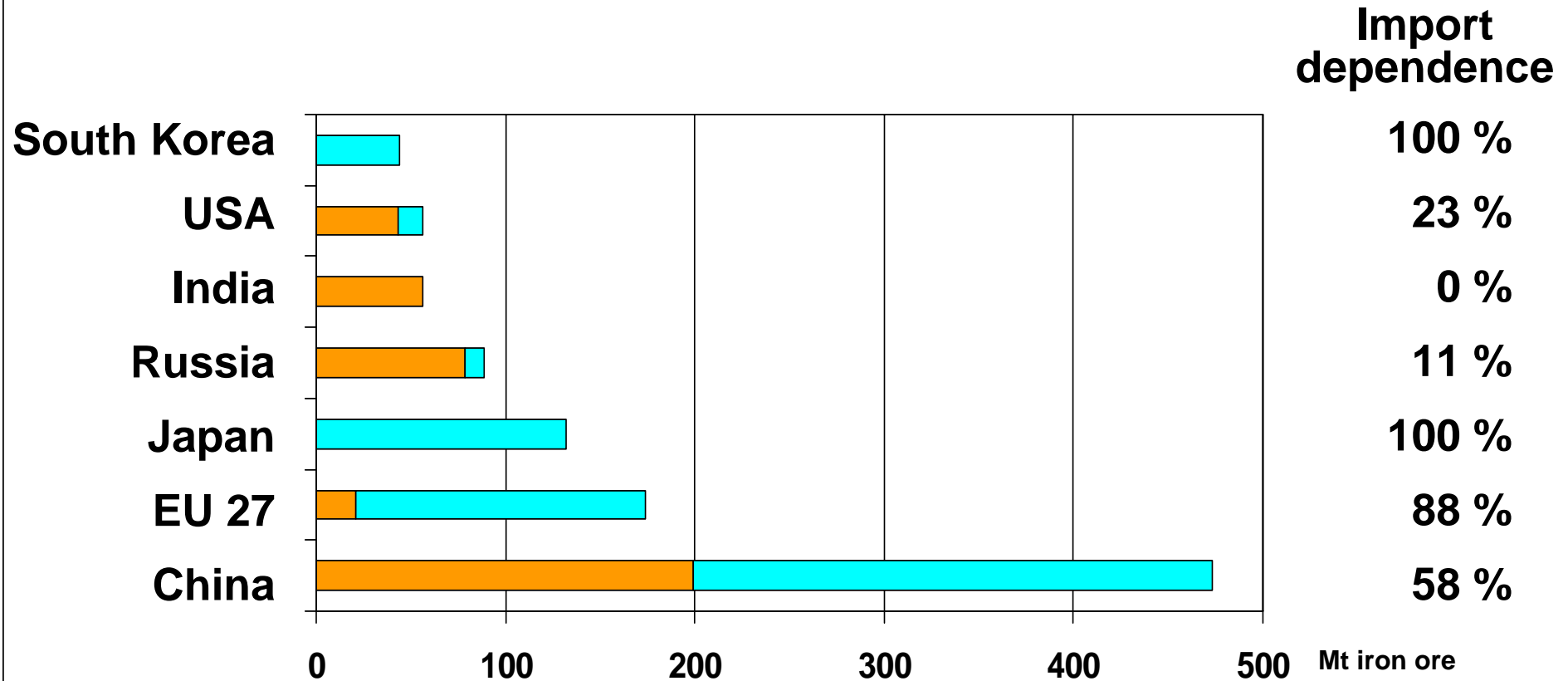


CORPORATE CONCENTRATION



IRON ORE DEMAND

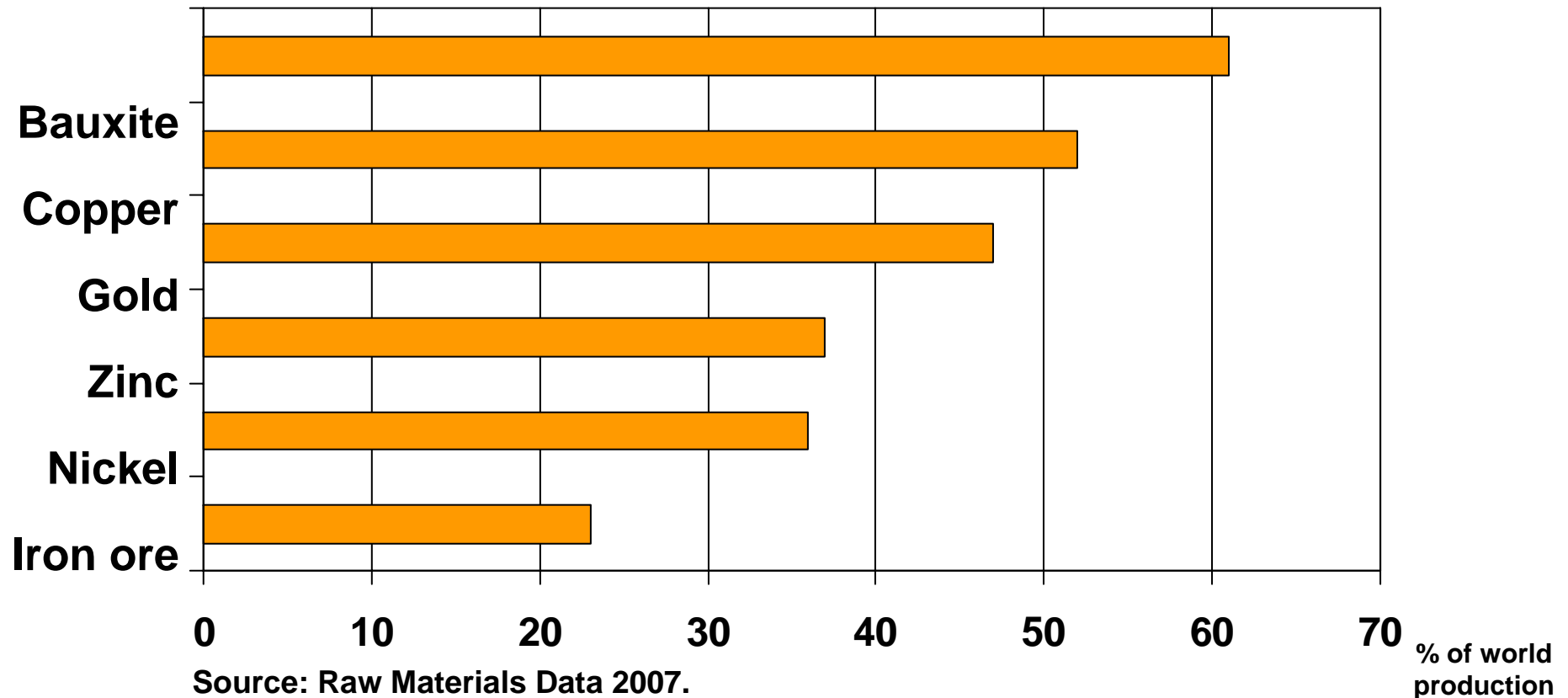
Domestic/import



Source: UNCTAD, RMG 2006.



PRODUCTION BY FOREIGN COMPANIES



GLOBAL MINING – STAKEHOLDER RESPONSES

- **Intensive activity, but slow supply increase.**
- **NGOs and TNCs less in focus.**
- **New companies entering the scene.**
- **Security of supply an issue - again.**
- **More state intervention - again.**
- **Speed of change will increase.**





EXPLORATION & INVESTMENTS

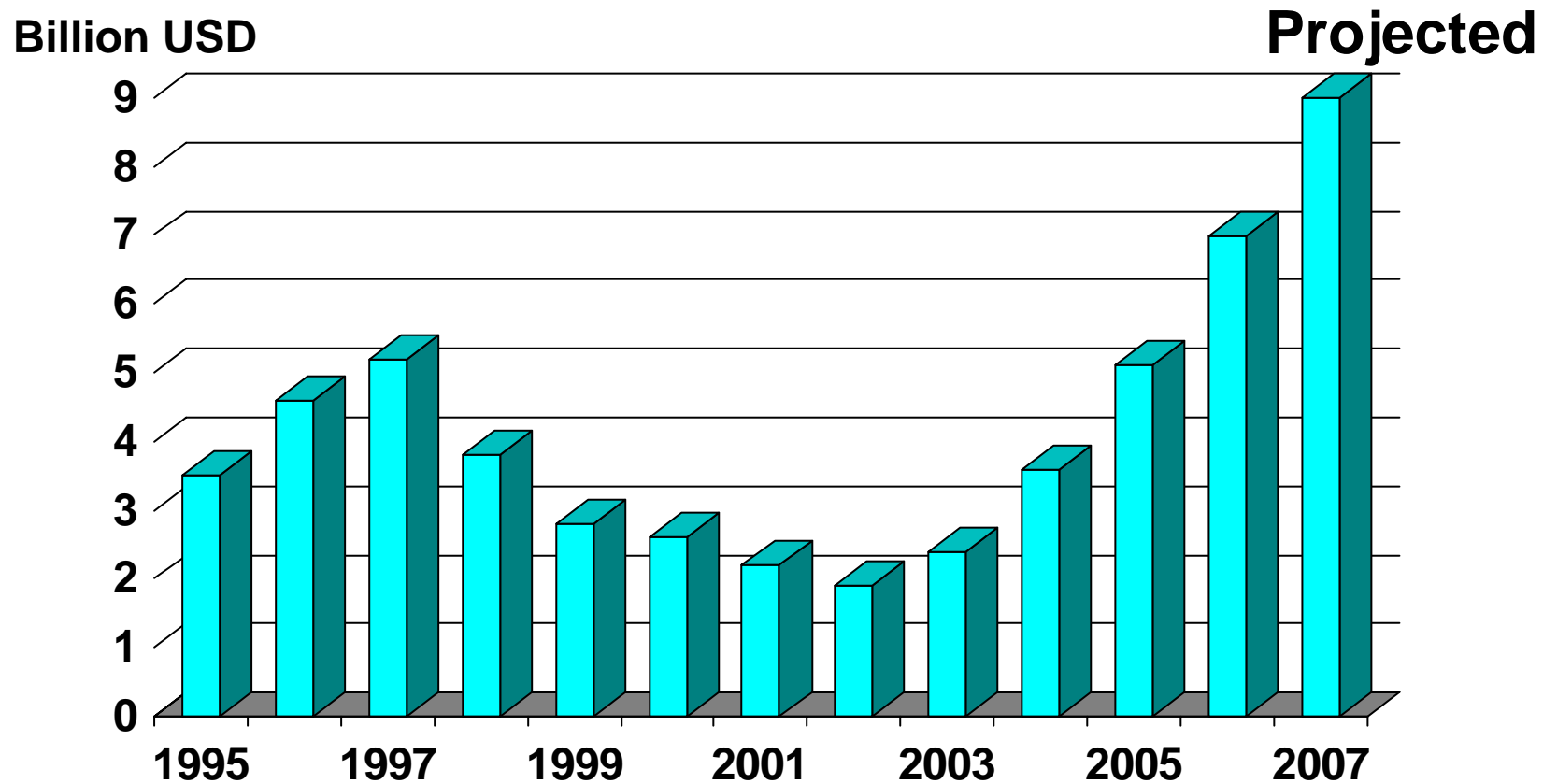
BECAUSE OF ITS
TANTALIZING PROPERTIES,
THE SWEDISH CHEMIST
ANDERS EKEBERG
NAMED HIS NEWFOUND
METAL "TANTALUM".

Tantalum drawing: Kaianders Sempler.



**Raw
Materials
Group**

GLOBAL EXPLORATION 1995 - 2007

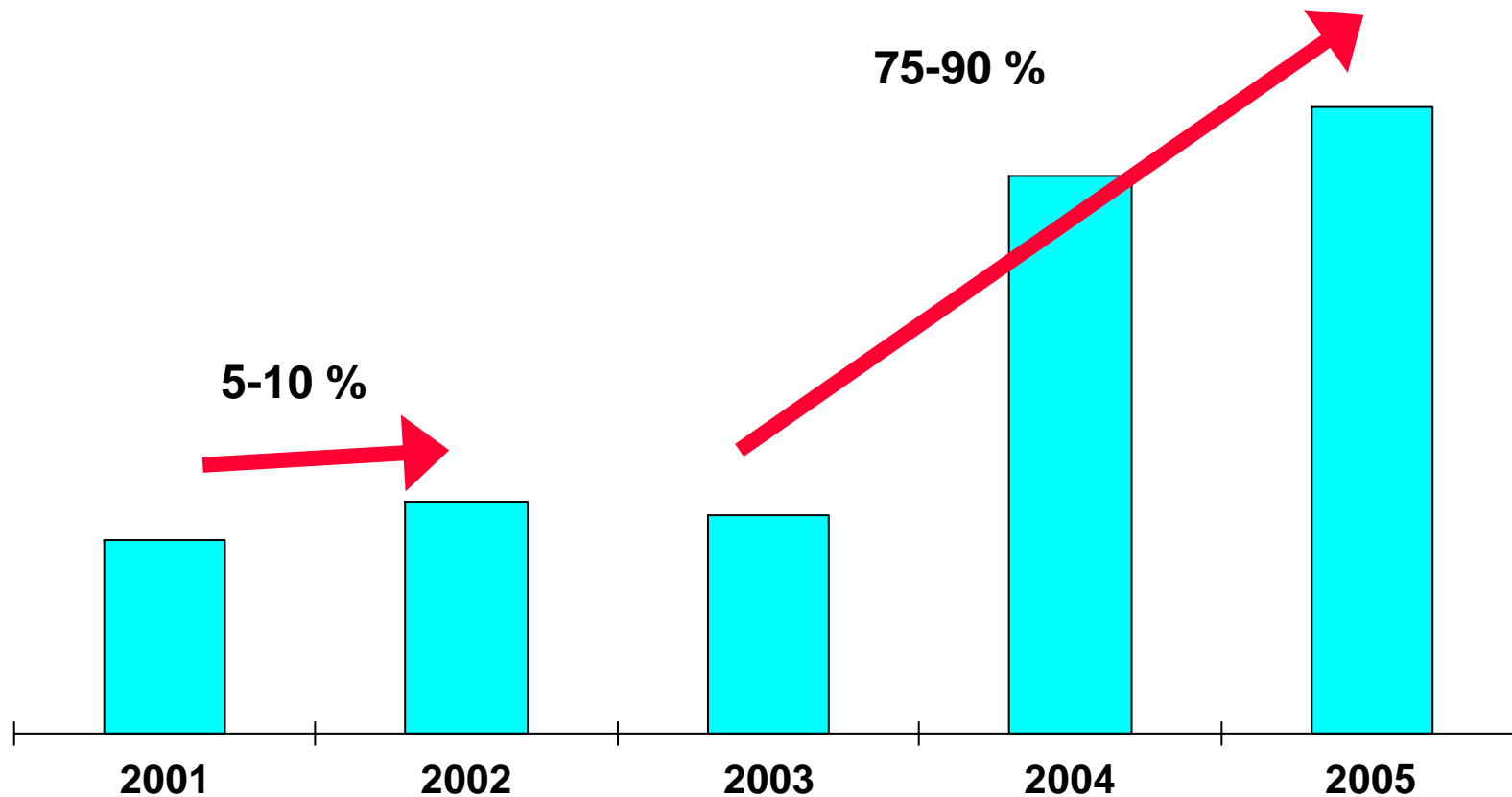


Sources: RMG, MEG.



**Raw
Materials
Group**

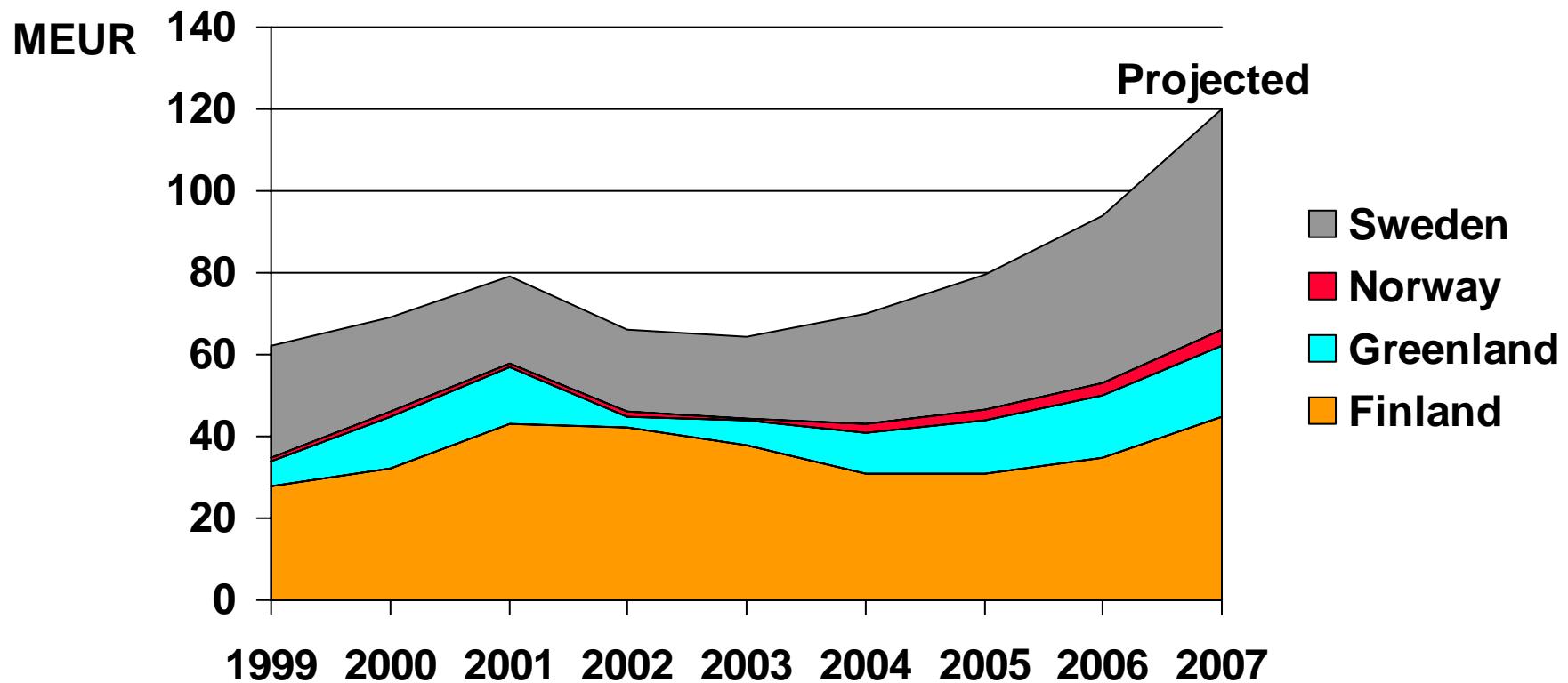
MINING PROJECTS UNDER CONSTRUCTION



Source: Raw Materials Group 2006.



EXPLORATION IN THE NORDIC COUNTRIES

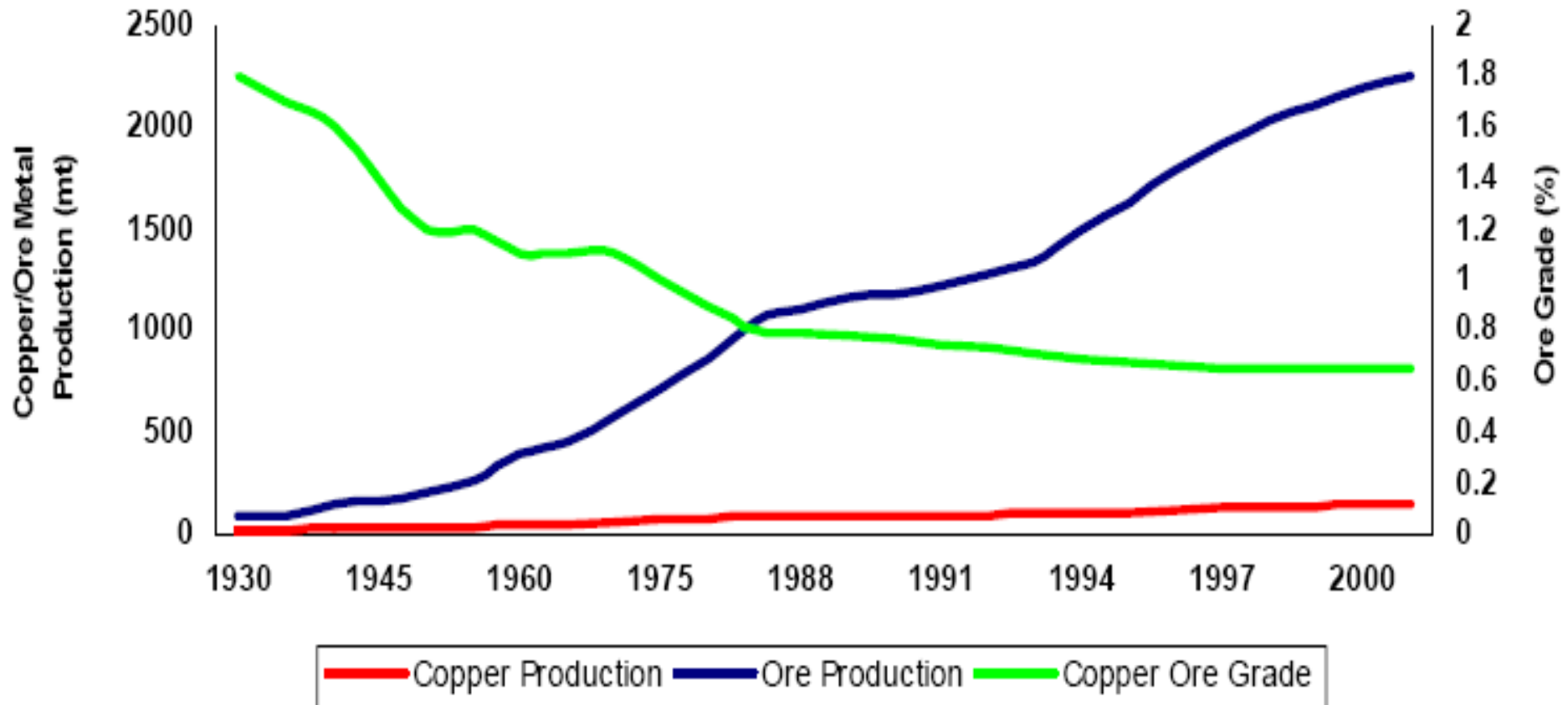


Sources: RMG est., Geological Surveys in each country, 2006.

HARSH CONDITIONS – REMOTE AREAS

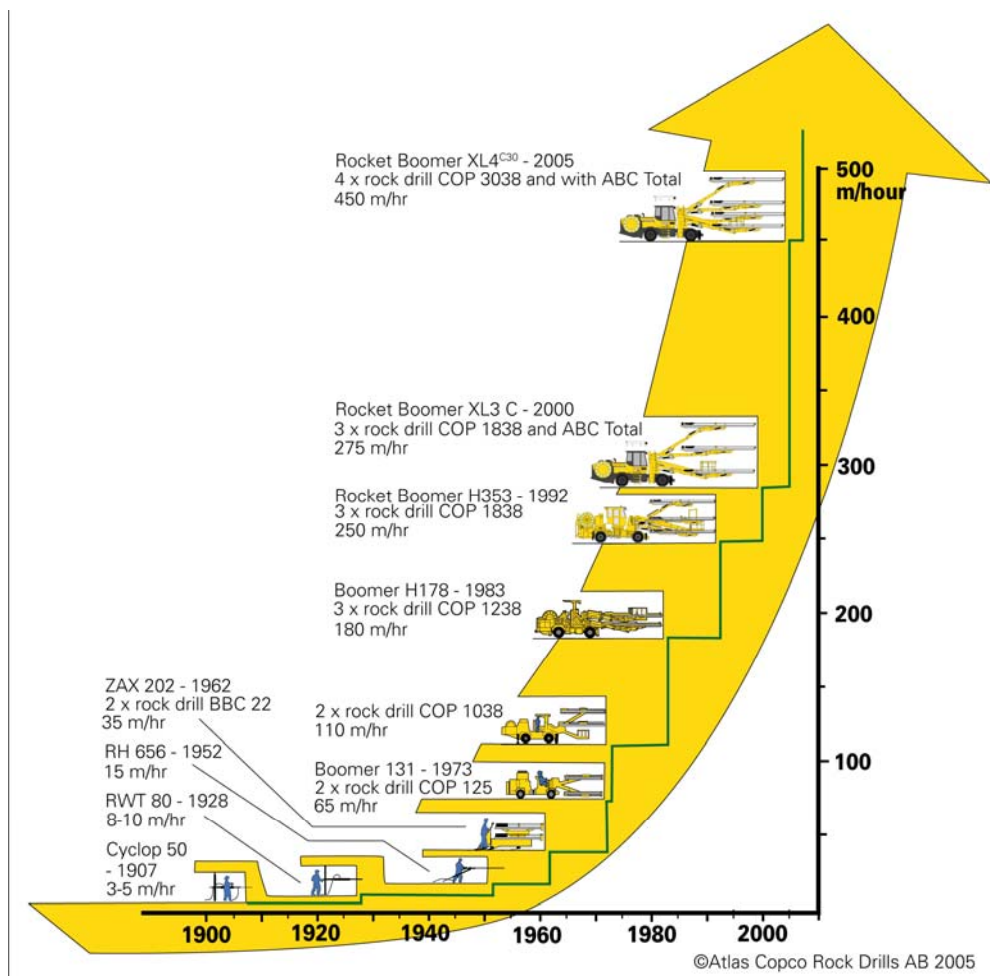


LOWER ORE GRADES



**Raw
Materials
Group**

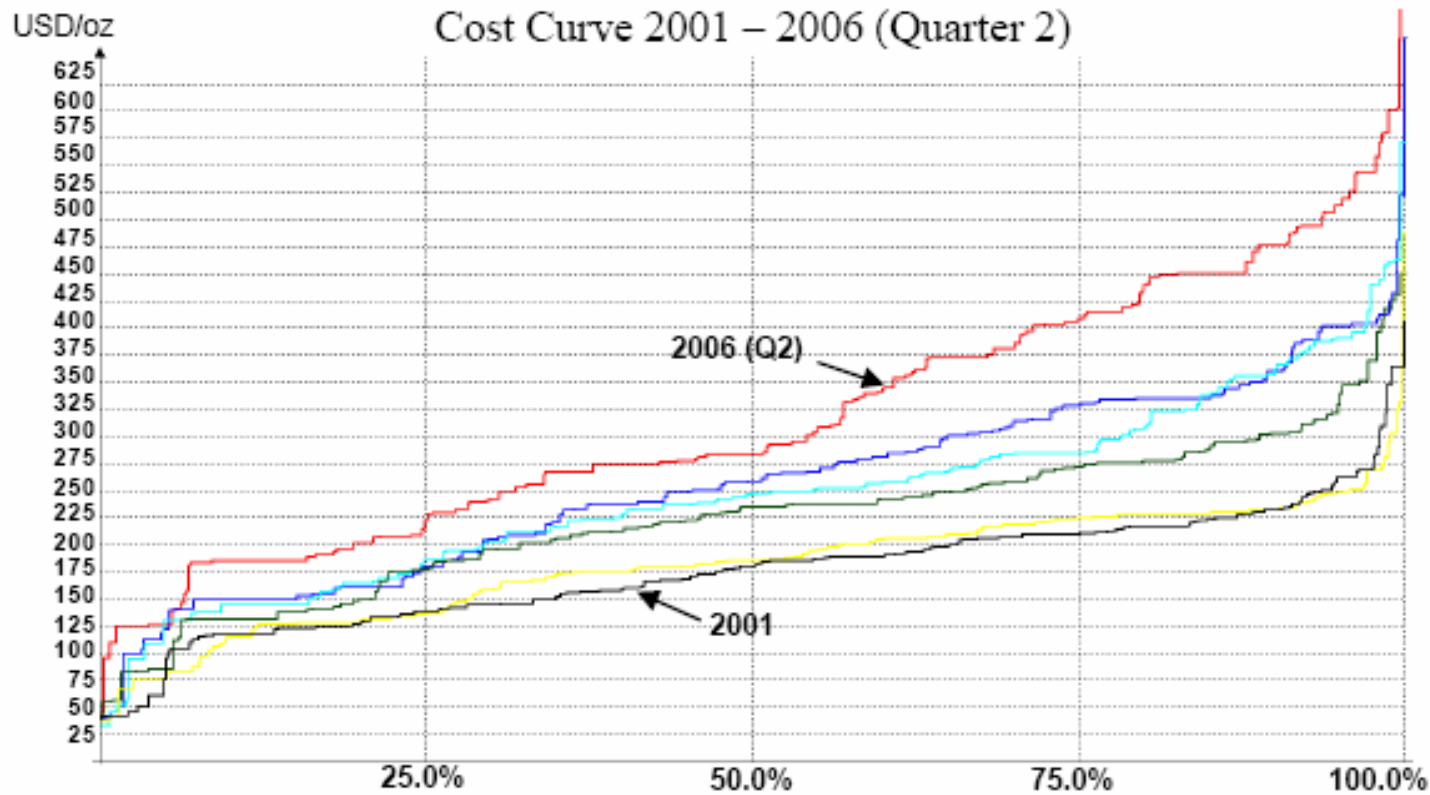
TECHNICAL DEVELOPMENT



**Drilling
technology
during 100
years**



CASH COSTS GOLD



Source: Raw Materials Group, World Bank 2006.



**Raw
Materials
Group**

EXPLORATION & INVESTMENTS

- **More exploration necessary.**
- **Exploration more difficult.**
- **Financial engineering:**
 - **Flow-through tax relief!**
 - **Nordic Mining Fund.**
- **Production costs increasing.**
- **Expanded R&D, but slow – too slow?**



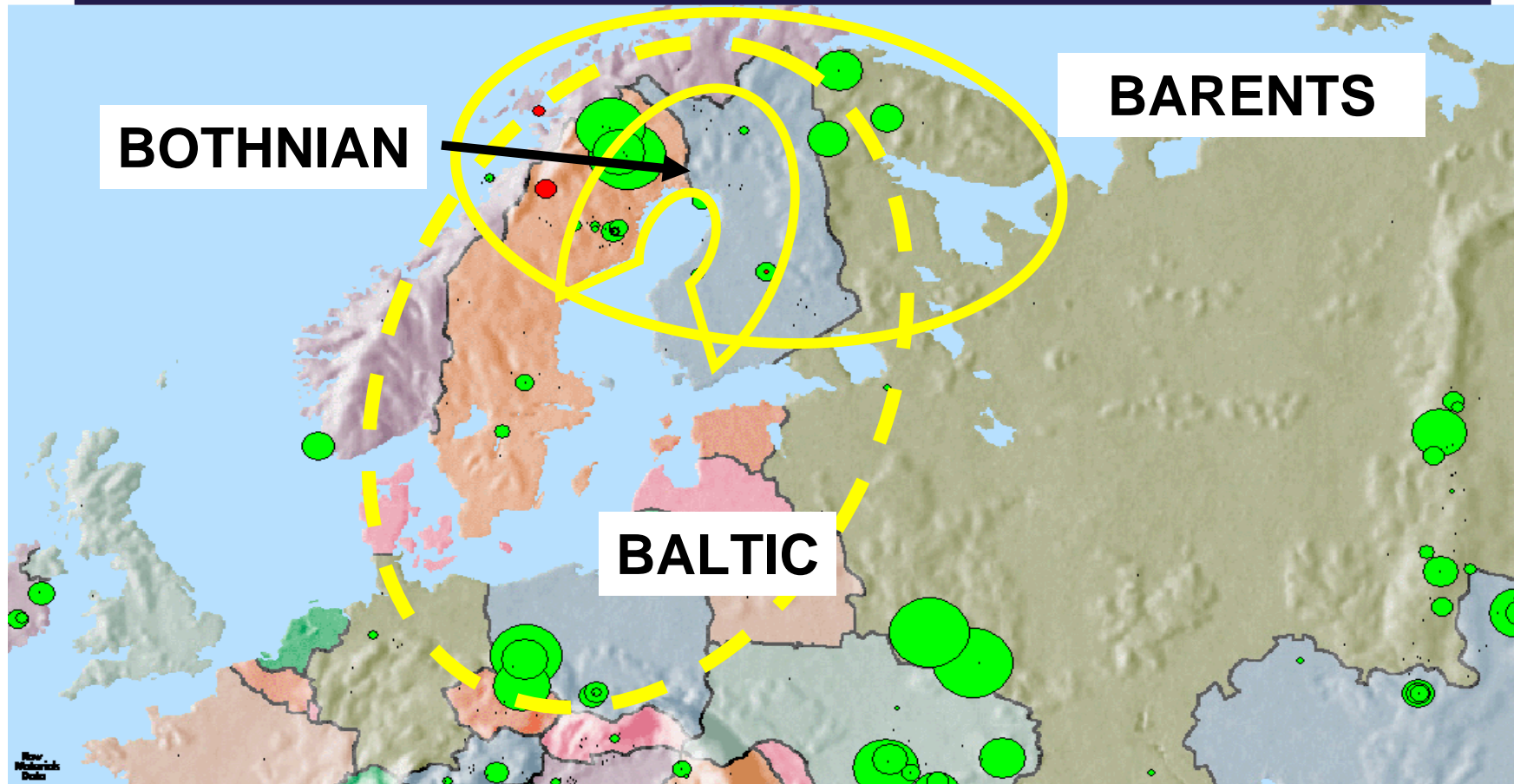
BALTIC MINING CLUSTER



Manganese drawing: Kaianders Sempler.



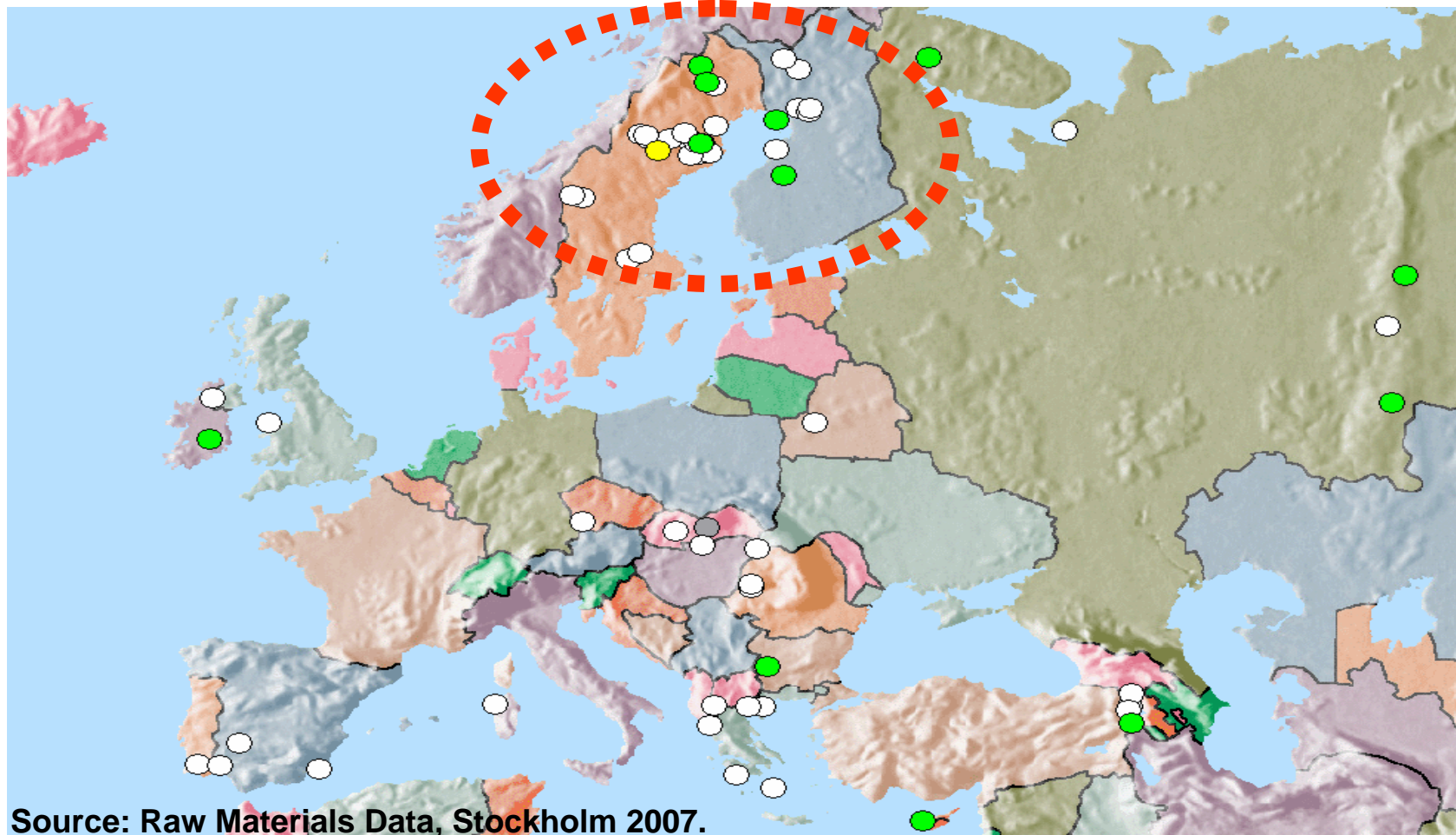
MINING CLUSTER IN NORTHERN EUROPE



Source: Noras, Ericsson 2006.



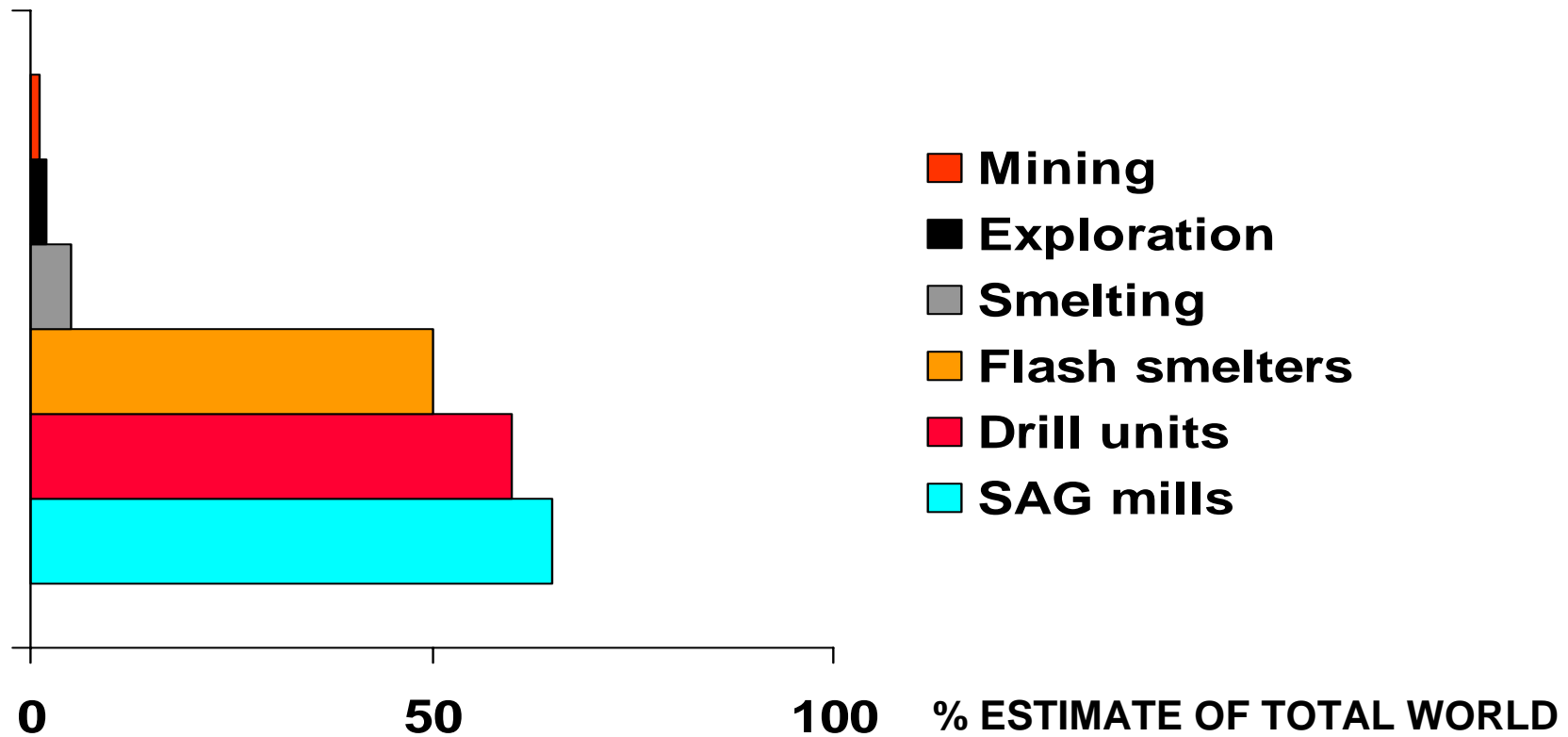
MINING PROJECTS



Source: Raw Materials Data, Stockholm 2007.



BOTHNIAN CLUSTER MARKET SHARES



Source: Noras, Ericsson 2006.

BALTIC MINING CLUSTER

- **Excellent basis for Baltic cluster.**
- **Platform for global cooperation:**
 - **Technical: R&D and training.**
 - **Legal: Coordinate legislation.**
 - **Mapping/promotion:
Merge geological surveys!**
 - **Environment: coordinate regulations.**



CONCLUSIONS

- **GLOBAL MARKET**
- **REGIONAL SOLUTIONS**
- **R&D - THE HEART OF THE MATTER**
- **MINING - IN FOCUS FOR YEARS**





THANK YOU !

www.rmg.se

Tungsten drawing: Kaianders Sempler.



**Raw
Materials
Group**