



STATE OF ISRAEL
MINISTRY OF INDUSTRY, TRADE & LABOR



מינהל | FOREIGN TRADE
סחר חוץ | ADMINISTRATION

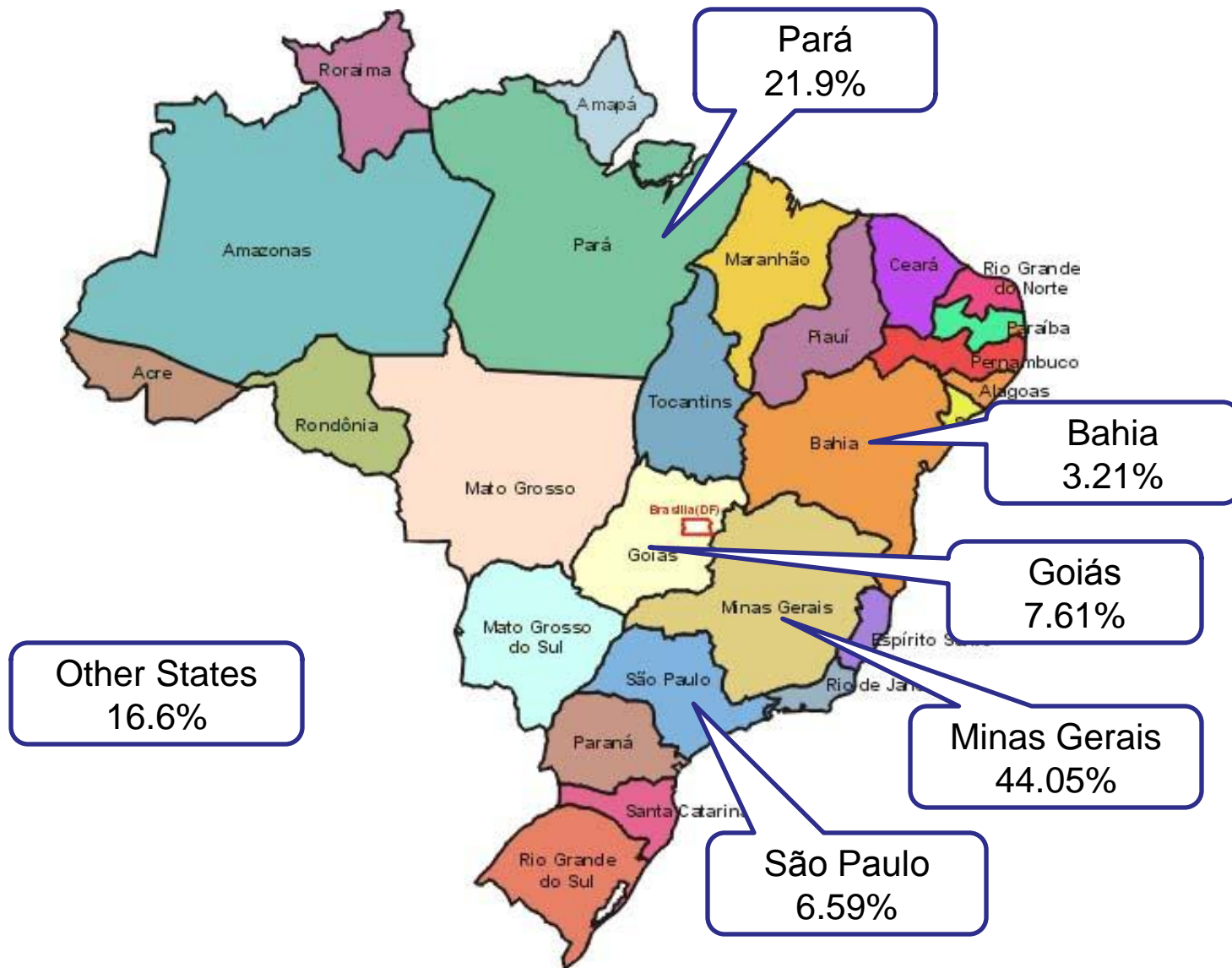
A Review of Major Players and Water Trends in the Brazilian Mining Sector

Roy Nir
Economic Attaché to Brazil
November 19th, 2009

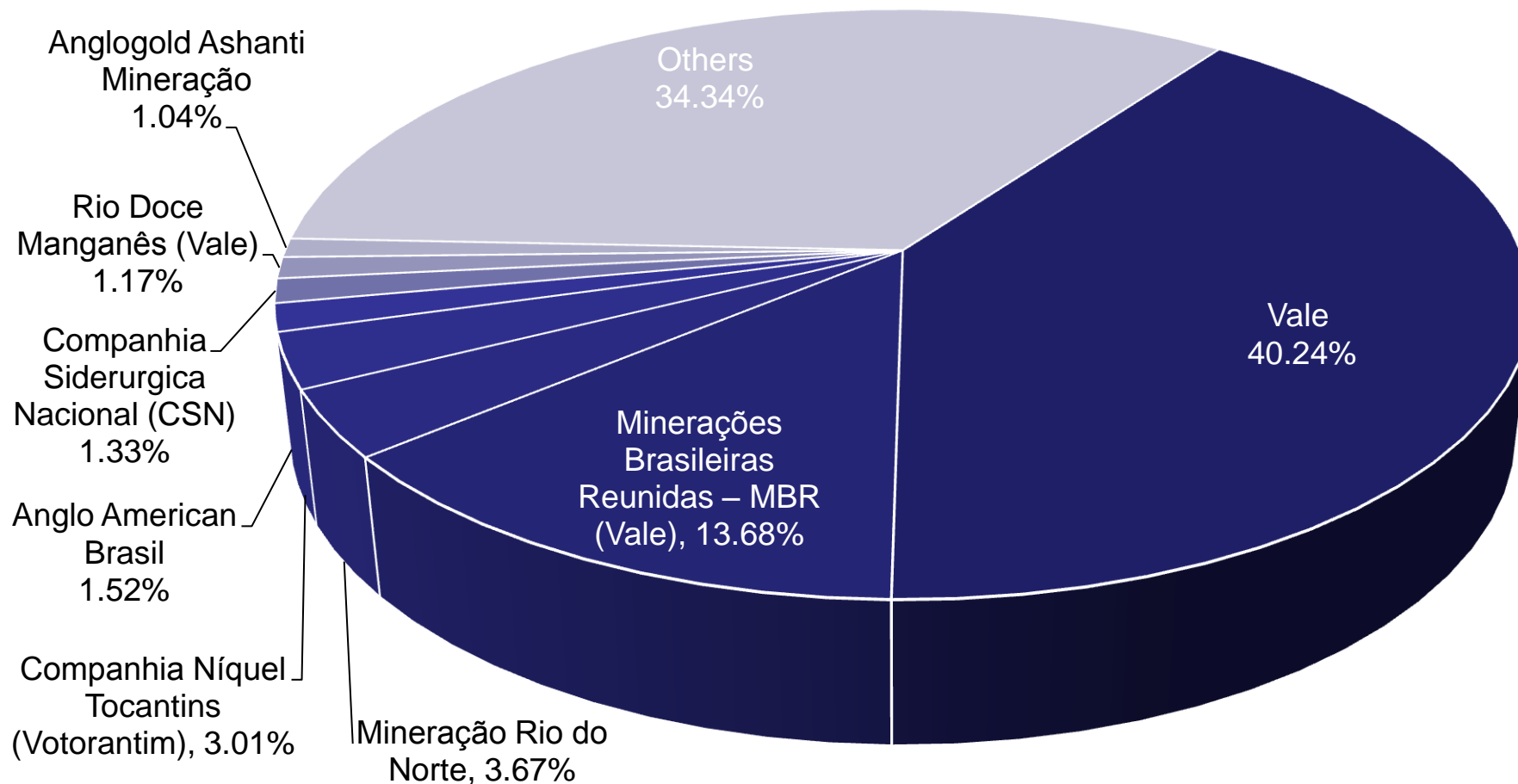
- Fifth largest mineral producer in the world – most attractive market in Latin America
- In 2006, the value of mineral production reached US\$ 22.7 billion, excluding petroleum and gas.
- In 2007 this value reached US\$ 27.5 billion - an increase of 21% compared 2006.
- In the next years, corporate investment in the sector will total US\$ 50 billion.
- Currently, the largest investment are led by large multinational companies.



Brazilian States Leaders in Mining Production



Main Companies in the Mining Sector Market Share (%)



Main Companies in the Mining Sector Table – Part 1

Companies	Primary products	Market share (%)
Vale	Sand, copper, iron, gold (primary), palladium, potassium, silver (secondary), rocks and gravel.	40.24
Minerações Brasileiras Reunidas - MBR (Vale)	Fire clay, bauxite, limestone, iron, phyllite and quartz.	13.68
Mineração Rio do Norte	Sand, bauxite	3.67
Companhia Níquel (Votorantim)	Cobalt, copper, nickel	3.01
Anglo American Brasil	Phosphate, niobium (pyrochlore), nickel	1.52
Companhia Siderurgica Nacional (CSN)	Limestone, iron	1.33
Doce Manganês (Vale)	Manganese	1.17
Anglogold Mineração	gold (primary), silver (primary)	1.04
Imerys Capim Caulim	Kaolinite	1.01
SAMA - Mineração de Amianto	Asbestos	0.87
Mineração Caraiba S.A	Copper, silver (primary)	0.86
Samarco Mineração S.A	Iron	0.86

- Biggest freshwater reserve in the world (around 12% of total)
Inadequate national territory distribution

- Amazon is the biggest river basin in the world but the less populated region in the country
- Around 36% of the potable water is wasted
- 10% of the country's territory is semi-arid
- Mines are primarily located in the Southeast region - the most populated area of the country



- Abundant and cheap water compared with other countries.
- Re-use operation investment analysis compared to the water costs for public distribution.
 - Industrial water cost is still lower than adopting the re-use processes.
- Limited environmental restrictions.
- Legislation (and public opinion) making water treatment and reuse more popular. However, this change is still slow.
- Business opportunities for international companies are mostly possible in offering innovative solutions and advanced technologies with competitive prices



Water Treatment Companies Major Integrators for mining sector

- Water and wastewater treatment companies operate mostly through two types of contracts:
 - The Build Operate and Transfer (BOT)
 - Engineering Procurement and Construction (EPC).
- The leading companies in the sector are:
 - Dalkia (www.dalkia.com.br)
 - Veolia Water Systems Brasil Ltda. (www.vivendiwater.com.br)
 - Suez Group (www.degremont.com)
 - Cetrel Lumina (www.cetrel.com.br)

- The major investments are concentrated in:
 - Water loss reductions
 - Wastewater treatment
 - Water collecting
 - Water re-use
- Effluent Treatment processes include:
 - preliminary treatment: physical processes for removing toxic materials, suspended solids and insoluble materials
 - advanced treatment: removal of organic materials, nutrients and pathogenic bacteria
- Membrane filtration for high quality water and Carbon technologies



- Main completed mining projects or currently in progress

INVESTMENTS	COMPANY	OBJECTIVE	PLACE	US\$ 1000	PERIOD
New Unit	CBA	Bauxite Mining	Miraí, MG	150	2007 to 2011
3rd Expansion Project	Alunorte	Bauxite Processing		846	2007 to 2009
New Refinery	Vale/Hydro	Aluminum Refining		1,500,000	2008 to 2011
118 Project	Vale	Copper Mining		232	2007 to 2009
Salobo Project	Vale	Copper Mining		855	2007 to 2010
Expansion	Caraíba Metais	Copper Mining	Camapari, BA	150	2007 to 2009
Expansion	Imerys	Kaolin Mining		150	2007 to 2009
Minas Project	MMX	Iron Mining	MG, RJ	2,350,000	2007 to 2011
Mine Expansion	M. Corumbaense	Iron Mining		1,000,000	2007 to 2011
Mine Expansion	Mhag	Iron Mining	Jucurutu, RN	622	2007 to 2010

Mining Projects in Brazil

- Main completed mining projects or currently in progress

INVESTMENTS	COMPANY	OBJECTIVE	PLACE	US\$ 1000	PERIOD
EFC Expansion	Vale	Transport		700	2007 to 2009
Mine Expansion	CSN	Iron Mining	MG	1,900,000	2007 to 2011
Mine Expansion	Vale	Iron Mining		1,800,000	2007 to 2010
New Port	EBX	Logistic	Peruíbe, SP	1,500,000	2007 to 2009
Onça Puma Project	Vale	Nickel Mining		1,400,000	2007 to 2009
Níquel Verm. Project	Vale	Nickel Mining		1,200,000	2007 to 2009
Expansion	Anglo American	Nickel Processing	Barro Alto, GO	1,200,000	2007 to 2011
New Mine	Mirabela Mineração	Nickel Mining	Ipiaí, BA	225	2007 to 2009
TOTAL (US\$ 1000)				17,780,000	

- Vale: new investments in the state of Pará
 - US\$ 20 billion up to 2012 - around 34% of the whole amount Vale intends to invest worldwide
- CSN: investment of R\$ 9.5 billion in expansion projects in Minas Gerais
 - to be accomplished by 2013.
- Three other announced investments in Minas Gerais:
 - US\$ 1.6 billion by Vallourec & Mannesmann and Sumitomo Metals in the city of Jeceaba;
 - US\$ 4.3 billion by Usiminas in city of Ipatinga, in the Steel Valley;
 - US\$ 1.5 billion by Açominas in the city of Ouro Branco.



Thank you