

# 稀土

## The Role of Government in Metallurgical Science: The China Case



TREM 2010  
17-18 March 2010  
Washington DC

Cindy Hurst  
FMSO Analyst

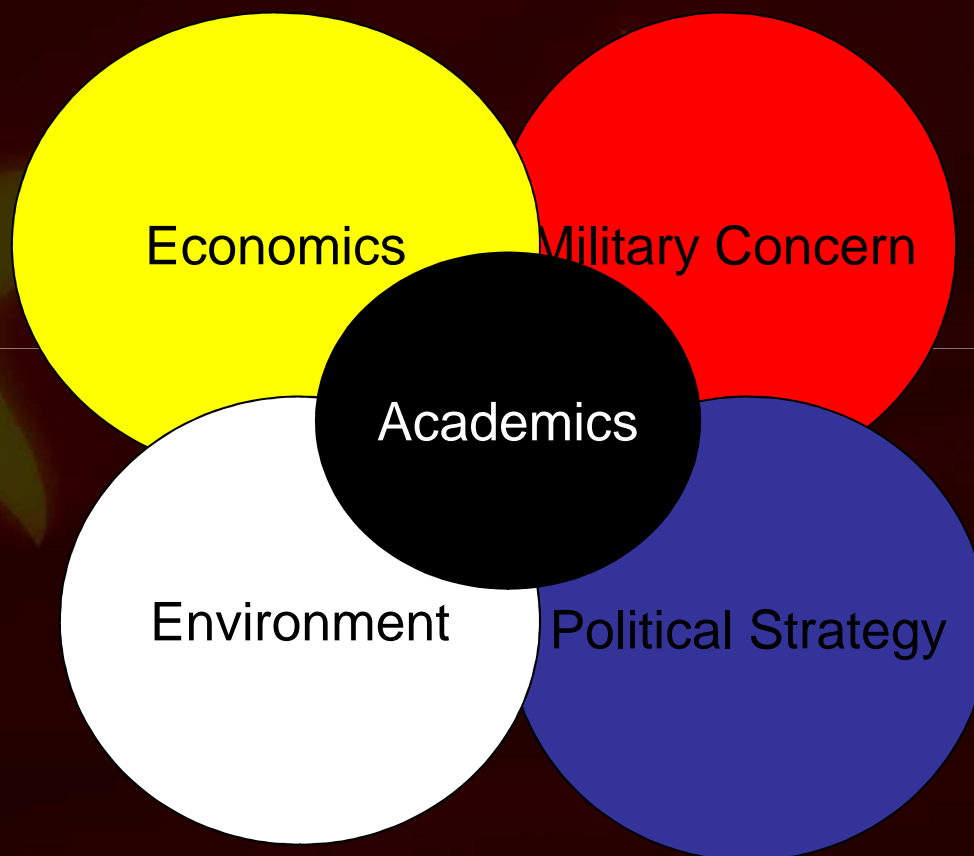


## Disclaimer

The views expressed in this presentation are those of the author and do not necessarily represent the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government



# Rare Earth: Complex & Multi-Faceted

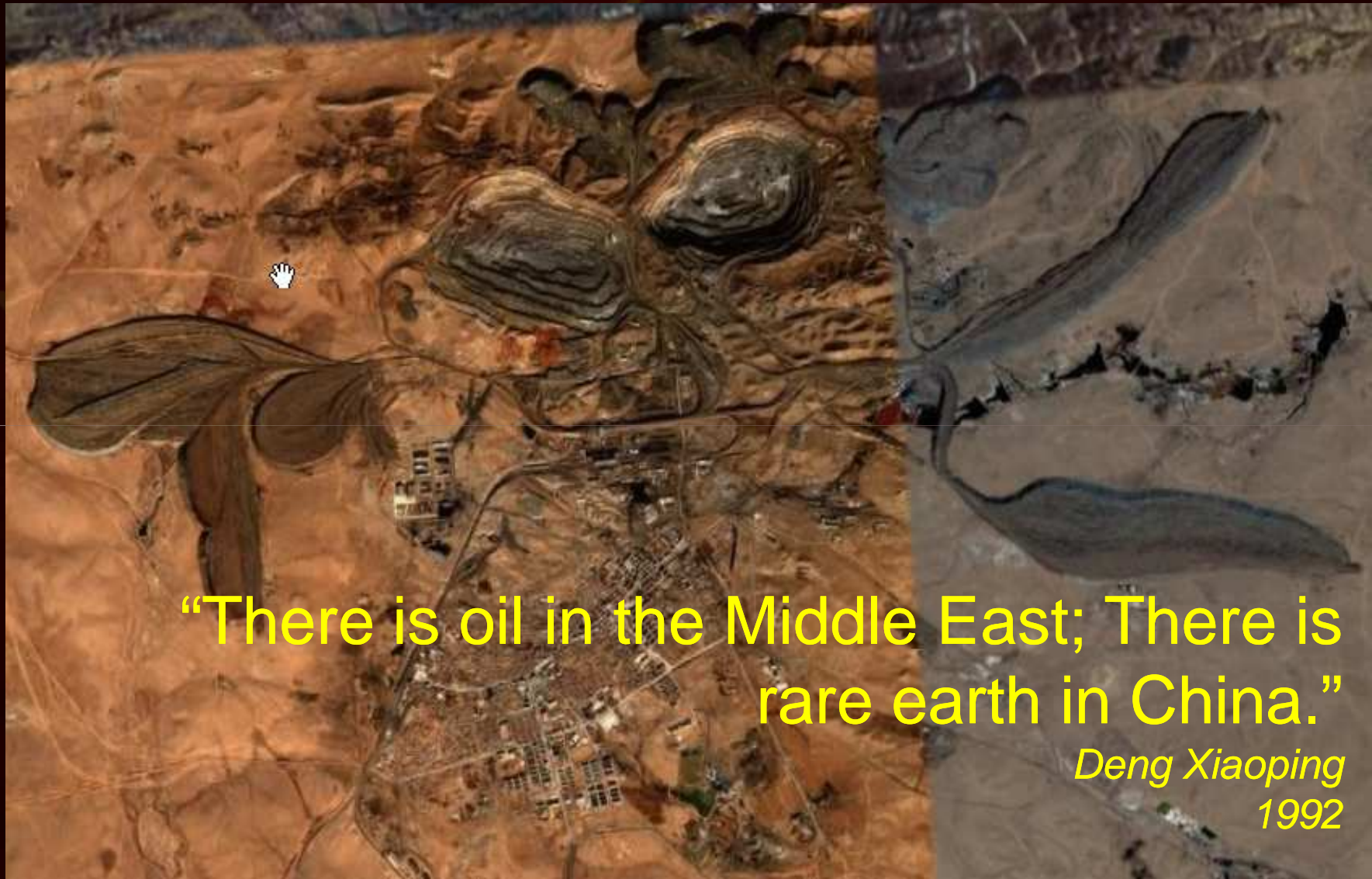




# The Academic Impact

- Shifting of academic emphasis
- U.S. paved the way, but slowed down
- China's R&D efforts in high gear
- Chinese Program 973 & Program 863
- Narrowing the technological gap





“There is oil in the Middle East; There is  
rare earth in China.”

*Deng Xiaoping*  
1992

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Unclassified





“Improve the development and application  
of rare earth and change the resource  
advantage into economic superiority.”

*Chinese President Jiang Zemin*  
1999

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Unclassified





“China’s abrupt rise in its status as a major producer, consumer, and supplier of rare earths and rare earth products is the most important event of the 1980s in terms of development of rare earths.”

*Wang Mingjin & Dou Xuehong*  
*The History of China’s Rare Earth Industry*  
1996



# Background

- 1950s: First RE recovery
- 1952: General Research Institute for Nonferrous Metals
- 1960s: Importance of maximizing Bayan Obo
- 1963: Baotou Research Institute of Rare Earths





# State Key Laboratories

- State Key Laboratory of Rare Earth Materials Chemistry and Applications – Peking University - Beijing
- State Key Laboratory of Rare Earth Resource Utilization – Changchun



# Journals

- *Journal of Rare Earth*
- *China Rare Earth Information (CREI) Journal*
- Chinese Society of Rare Earths
  - Founded in 1980
  - 100,000 registered researchers!





# China's Growing Domestic Need

U.S.

86% Population = 280 million cell phones

China

50% of population = 670 million Cell phones

1.1 billion+ potential cell phones



# China's Growing Domestic Need



Source: Reuters



Source: Allianz

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Unclassified





# Issues China Faces

- Environmental damage
- Smuggling and illegal mining
- Poor management

The irony

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### Conclusions & Questions

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