

# REGULATORY POLICY FOR SUSTAINABLE NATURAL RESOURCES DEVELOPMENT

Joint Meeting of the  
NATIONAL RESEARCH COUNCIL  
BOARD ON EARTH SCIENCES AND RESOURCES  
and  
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## **A GRAND CHALLENGE: Sustainable Natural Resources Development on a Small Planet**

Sustainable Development:

...meeting the needs of the present without compromising the ability of future generations to meet their own needs. (UN, 1987)

What regulatory policies encourage sustainable mineral resource development?

What regulatory policies encourage sustainable availability of mineral resources?

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## LIFE CYCLE ANALYSIS

RESOURCE  
DEVELOPMENT

METALS

Exploration

Extraction (Mining)

Reclamation



Primary Product

Fabrication

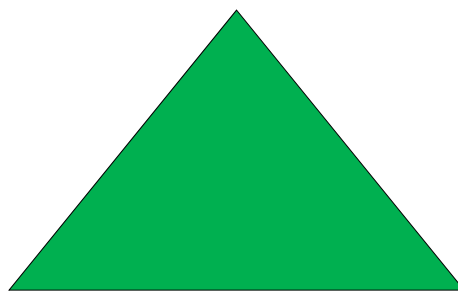
Recycle

Tertiary Product

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## SUSTAINABLE RESOURCE DEVELOPMENT

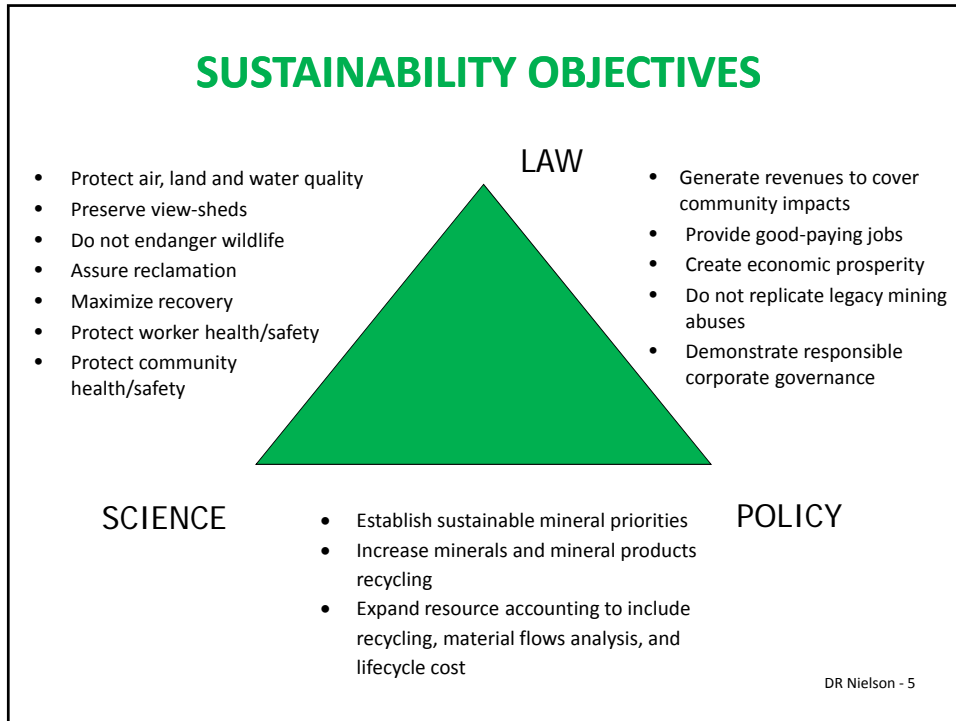
LAW



SCIENCE

POLICY

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## RECYCLING EXAMPLES

<u><b>ELECTRONICS</b></u>	<u><b>CELL PHONES</b></u>
<ul style="list-style-type: none"> <li>• 1 Mt Circuit Boards                             <ul style="list-style-type: none"> <li>80 – 1500 g Gold</li> <li>160 -210 kg Copper</li> </ul> </li> <li>• HP – Noranda Partnership</li> <li>• 1400 t PC/e-scrap monthly                             <ul style="list-style-type: none"> <li>10X precious metals in primary ores</li> </ul> </li> <li>• Est. 75% PCs not recycled                             <ul style="list-style-type: none"> <li>135,000 t to landfills/yr</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• 1Mt Cell Phones                             <ul style="list-style-type: none"> <li>140 kg Copper</li> <li>3.14 kg Silver</li> <li>300 g Gold</li> <li>130 g Palladium</li> <li>3 g Platinum</li> </ul> </li> </ul> <p style="text-align: right; font-size: small;">(Falconbridge, 2005)</p> <ul style="list-style-type: none"> <li>• 14,000 Mt cell phones retired/yr</li> <li>• Less than 1% recycled</li> </ul>
(www.usgs.gov)	(www.usgs.gov)

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## Incorporate Science in the Policy-Making Process

**Include** a range of respected scientists.

**Undertake** a peer review of scientific findings whenever and wherever possible to ensure that all issues are addressed appropriately.

**Make decisions** based on the best information available.

**Identify** the importance of factors other than science that may affect the decision.

**Educate** the public about the science used.

**Monitor** outcomes.

(EnLibra, Oquirrh Institute)  
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## NEXT STEPS

