

Green Practices and Sustainability

Greater Ozarks CHMM
Environmental Summit
April 26, 2012



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Questions:

- **Which president formed the EPA?**
- **What year was the EPA formed?**
- **What event precipitated the formation of the EPA?**



Cuyahoga River – 1969



Questions:

- **What does RCRA stand for?**
- **What does TSCA stand for?**
- **Which event led to the passage of RCRA and TSCA?**



Love Canal – 1970s



Love Canal sign/Lois Gibbs [photo]. Retrieved January 2010 from <http://www.cms.westport.k12.ct.us>

Questions:

- **What is Superfund's real name?**
- **Which event led to the passage of Superfund?**



Superfund

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 1980



Valley of the Drums [photo]. Retrieved January 2010 from www.epa.gov/superfund/20years/images/valley.jpg

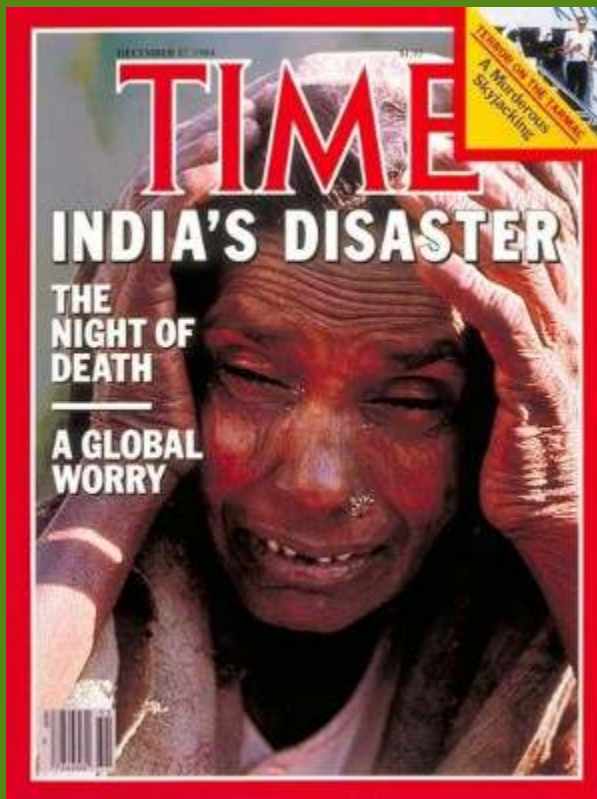
Questions:

- **What does EPCRA stand for?**
- **Which event led to the passage of EPCRA?**



Bhopal and EPCRA

Emergency Planning and Community Right to Know Act (1986)

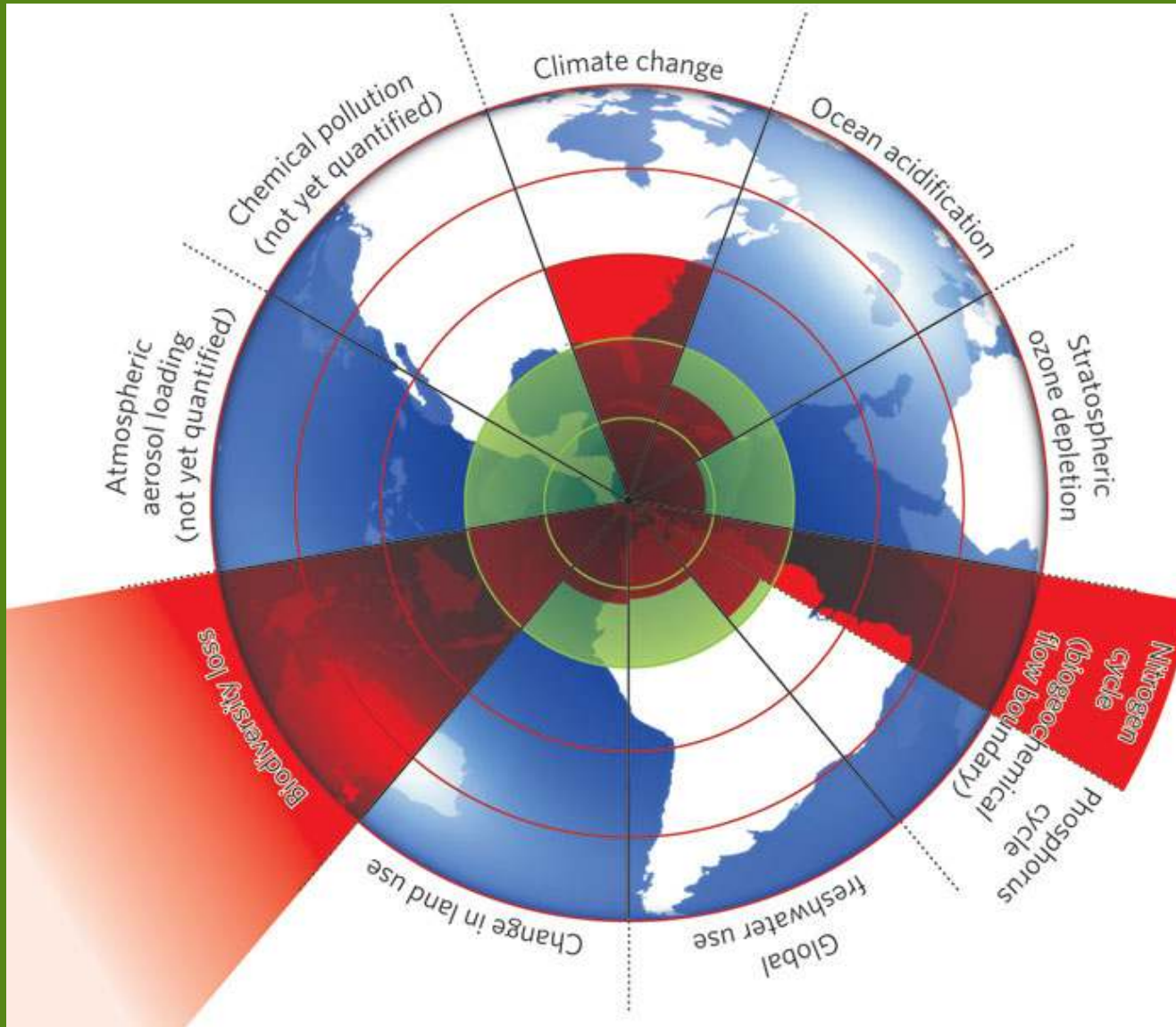


Question:

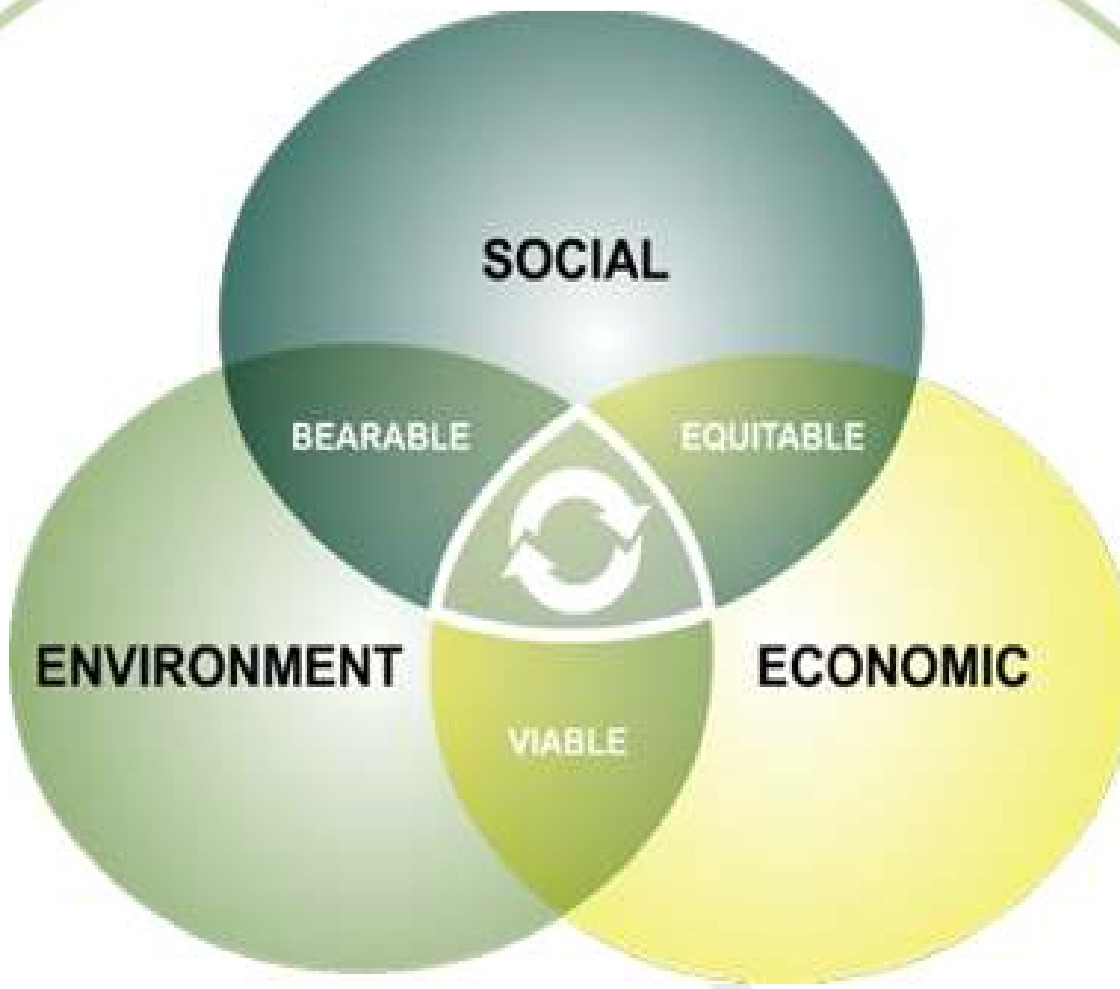
- **Which event will lead to the widespread adoption of sustainability?**



Non-sustainable



Sustainability



Why green businesses?

- **Saves money**
- **Reduces regulatory burden**
- **Improves health and safety**
- **Improves company image**
- **Requirement of some purchasers**



Economics of waste



- **Manifesting/labeling**
- **Disposal**
- **Reporting**
- **Taxes/fees**
- **Containers**
- **Monitoring**
- **Testing**
- **Medical surveillance**
- **PPE**
- **Studies/modeling**
- **Recordkeeping**
- **Training /preparedness**
- **Inspections**
- **Environmental insurance**
- **Financial assurances**

Contingent costs

- **Decommissioning**
- **Promulgated regulations**
- **Future compliance costs**
- **Penalties/fines**
- **Future remediation**
- **Property damage**
- **Personal injury damage**
- **Legal expenses**
- **Economic loss damages**

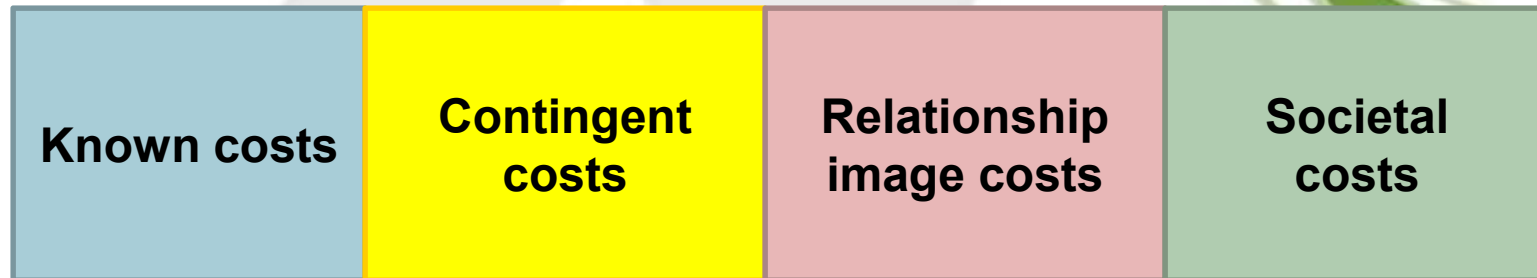


Societal costs

- **Health impacts on community**
- **Nearby property values**
- **Company relationship with regulators**
- **Company image with shareholders and customers**



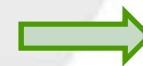
Cost Accounting



Conventional Accounting

Full Cost Accounting

Easy to measure



Difficult to measure

Sustainability Measures



Global Reporting Initiative- 183 US companies

www.globalreporting.org



ISO Standards - 162 countries **www.iso.org**



Toward Sustainability

- **Green teams – EMS, ISO**
- **Community sustainability**
- **(Re)Design for environment**
- **Public/private partnerships**
- **Supply chain partnerships**

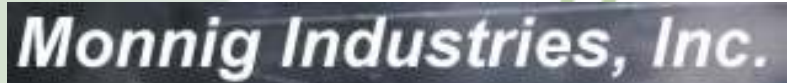
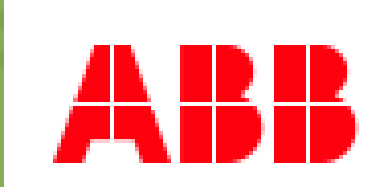


Toward Sustainability

- **Energy efficiency**
- **Heat recovery, co-generation**
- **Renewable energy**
- **Water conservation, reuse**
- **Zero waste**
- **Green infrastructure**



P2 Partners



Pollution prevention intern program



**260,883 lbs of medical
and hazardous waste**

**8432 metric tons of
CO₂e reduced**

**16,903,526 gallons of
water saved**

\$ 1,038,558 saved



The Opportunity to Invest in Safer Chemicals

GreenScreen™ Training



This GreenScreen™ Training is being held in conjunction with the **7th Annual Green Chemistry and Commerce Council (GC3) Innovators Roundtable** May 9-11, 2012.

www.greenchemistryandcommerce.org/events.roundtable.overview.php

7th Annual
GC3 Green Chemistry & Commerce Council
Innovators Roundtable
MAY 9-11 • 2012
Ann Arbor, Michigan
Hosted by NSF International



Safer Chemistry



E3 Missouri



E3: ECONOMY • ENERGY • ENVIRONMENT

SUPPORTING MANUFACTURING LEADERSHIP THROUGH SUSTAINABILITY



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