

THE GRAHAM LECTURE: SUSTAINABLE DEVELOPMENT OF NATURAL RESOURCES IN A RISK AVERSE ENVIRONMENT

43rd Annual Atlantic Canada Economics Association
Wolfville - 24th October 2015

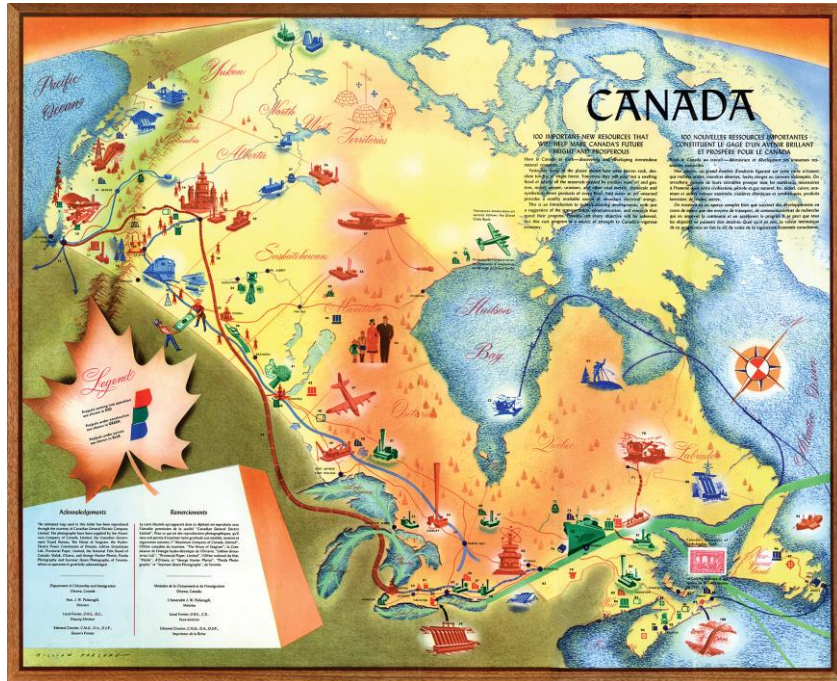
Dr David Wheeler
President & Vice-Chancellor
Cape Breton University

Cape Breton University
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A parable....

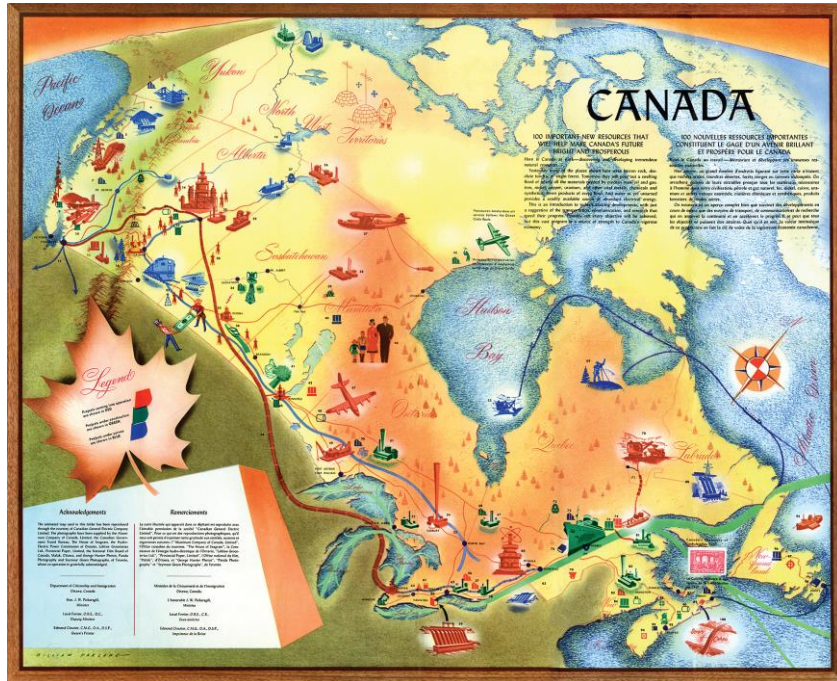
100 Important New Resources that will help make Canada's future bright and prosperous....

Department of Citizenship and Immigration, 1955



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#28 - Athabasca tar sands—North America's largest reserve of petroleum, awaiting economic development

Obama calls Canada's oilsands 'extraordinarily dirty'

- Toronto Star 6th March 2015



“The reason that a lot of environmentalists are concerned about it is the way that you get the oil out in Canada is an extraordinarily dirty way of extracting oil”

Where to now for Keystone XL?



TransCanada | Energy East Pipeline - Claimed Benefits

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- **Development and Construction Phase (7 years)**
 - Planning and building the pipeline will create more than 8,300 full-time equivalent direct jobs and over 5,300 indirect jobs.
- **Operations Phase**
 - The first 20 years of operations are expected to sustain nearly 900 full-time direct jobs across Canada related to the pipeline's operation. Thousands of indirect and induced jobs are also expected to be generated by the project in all provinces along the route.
- **Economic Impact**
 - \$36 billion over 20 years

Alberta has 173 billion barrels equivalent of crude oil & needs \$218bn investment over the next 25 years....



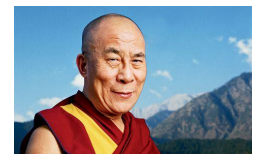
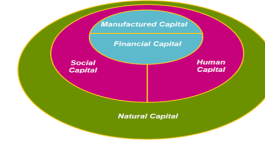
The lesson of this parable....

Don't start from here?

Do secure the support of all relevant communities if you want your investments to pay off....

CONTENT OF PRESENTATION

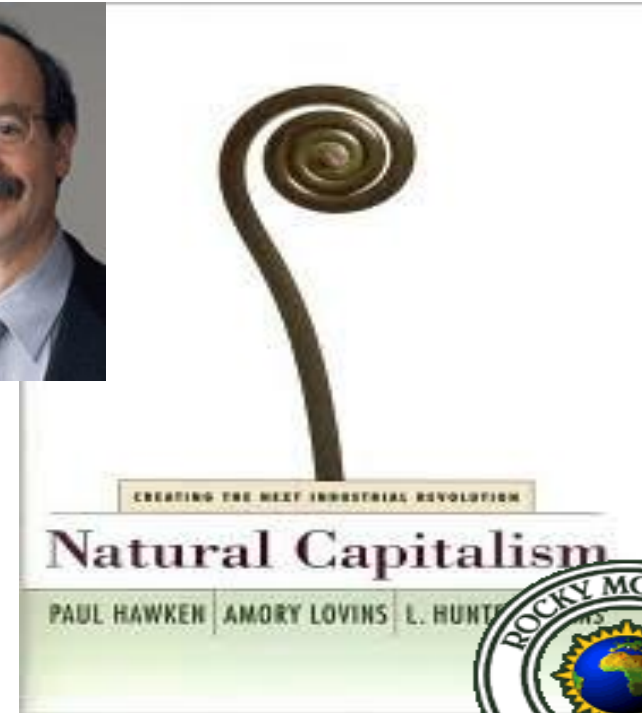
- Some thoughts on capitalism
- A second parable
- Some thoughts on managing risk
- Conclusions



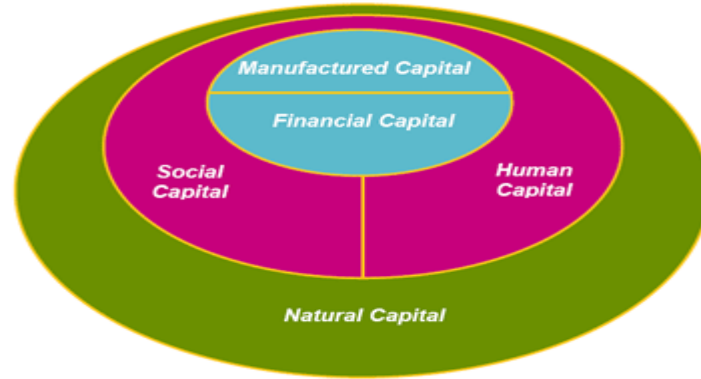
Some thoughts on capitalism

Amory Lovins on capitalism

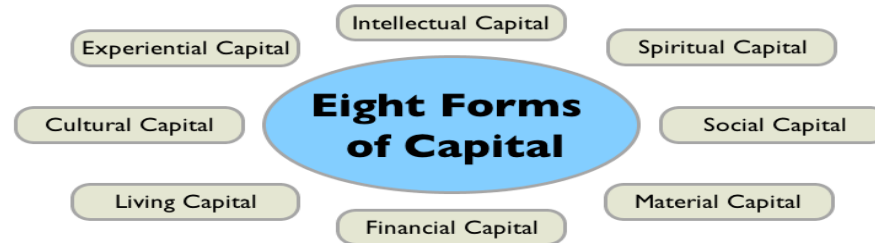
“Capitalism is a very good idea, we should try it some time....”



Five (or Eight) forms of capital



Forum for the Future



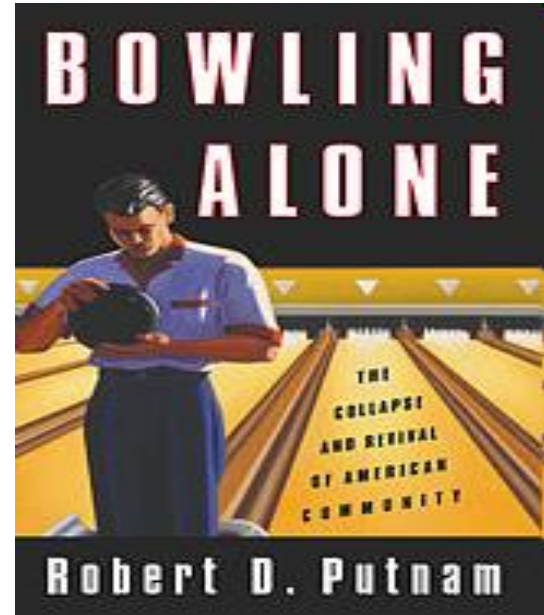
Ethan Roland & Gregory Landua

Social Capital - Robert Putnam

Joining and participating in one group cuts in half your odds of dying next year.

Every ten minutes of commuting reduces all forms of social capital by 10%

Watching commercial entertainment TV is the only leisure activity where doing more of it is associated with lower social capital.



A definition of social capital

Social capital is the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relations. Its effects flow from the information, influence, and solidarity it makes available to the actor.

Adler and Kwon (2002)

Three dimensions of social capital

- Stakeholder networks (structural dimension)
- Trust, norms and reciprocity with stakeholders (relational dimension)
- Shared language and mutual understanding with stakeholders (cognitive dimension)

Nahapiet and Ghoshal (1998)

The practical value of social capital

**.....reduces transaction costs and
bureaucratic obstruction**

.....speeds up deals

.....increases client loyalty and commitment

.....mitigates the impacts of political risks

Corporate competitive strategy and a stakeholder approach

- R Edward Freeman

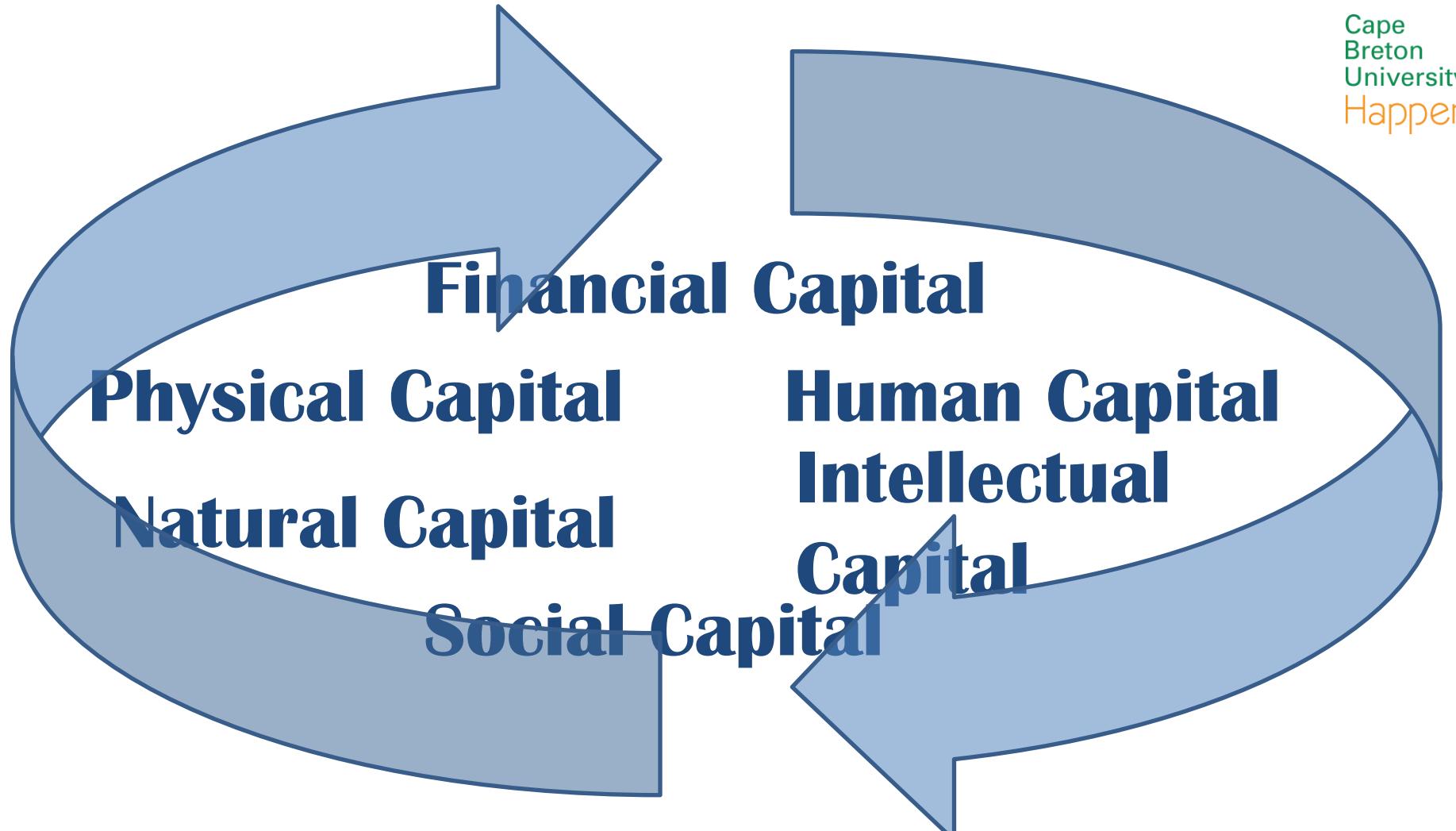
Stakeholder capitalism sets a high standard, recognizes the common-sense practical world of global business today, and asks managers to get on with the task of creating value for all stakeholders.

R Edward Freeman, 2000



Theory and practice of value creation – Some points of reference

- Emerson J (2003). The blended learning proposition: Integrating social and financial results. *California Management Review* 45(4) 35-51.
- Hart S L and Milstein M (2003). Creating sustainable value. *Academy of Management Executive* 17(2), 56-67.
- Wheeler D, Colbert B and Freeman RE (2003). Focusing on Value: Reconciling corporate social responsibility, sustainability and a stakeholder approach in a network world. *Journal of General Management* 28(3), 1-28.
- Porter M E and Kramer M R (2011). [Creating shared value](#). *Harvard Business Review* Jan-Feb 2011, 62-77.



Another parable

“Protesters plan more protests after violent clash with RCMP over shale-gas project”



“The clash between the RCMP and the Elsipogtog First Nation, north of Moncton, began early Thursday morning when a large number of officers arrived at a compound where SWN Resources Canada stores equipment. The police intended to enforce an injunction against a native blockade that has prevented SWN, a natural gas and oil exploration company, from conducting seismic testing.”

Globe and Mail 17th October 2013

“The often-ignored facts about Elsipogtog”

– Chelsea Vowel, Toronto Star, 14th November 2014

“Fears of renewed violence should not blind us to the underlying issues: unresolved land claims, resource development without prior and informed consent, concerns of environmental degradation and inadequate economic benefits to residents. Elsipogtog is just one area of the country coming face to face with the consequences of these problems. This is not a “native” issue; this situation impacts every single one of us living on these lands.”



Unresolved issues



“Under the Peace and Friendship Treaties of 1760 and 1761 in the Maritimes, the Mi’kmaq and the Maliseet signatories did not surrender rights to lands or resources”

- Aboriginal Affairs

Unresolved issues



“People have to realize that there's unfinished business across the country and it's no longer business as usual anywhere in the country.”

Bill Gallagher

(author of Resource Rulers, 2012)

Amanda Polchies holds an eagle feather and kneels before a wall of RCMP officers on Oct. 17. APTN/Ossie Michelin

Kennetcook's experience

Fracking waste water leak in Kennetcook investigated

There are an estimated 27 million litres of fracking waste water in Nova Scotia

CBC – January 17th 2014

Provincial environment officials are looking into a leak of fracking waste water at holding ponds in Kennetcook, N.S.

There are an estimated 27 million litres of fracking waste water in Nova Scotia. Some of it contains so-called Naturally Occurring Radioactive Materials (NORMs). Fracking waste water is stored at the Atlantic Industrial Services facility in Debert, as well as in holding ponds in Kennetcook and Noel.



REVIEW PROCESS

CBU Verschuren Centre appointed by Provincial Government August 2013

Panel appointed February 2014

Public information sessions x 2 April 2014

Primer released April 2014

238 unique submissions received by April 30th 2014

Nine discussion papers released May-July 2014

Eleven public meetings conducted July 16th – 29th 2014

Report and recommendations submitted to DoE August 29th 2014

Government response September 3rd 2014

Legislation passed November 14th 2014



NOVA SCOTIA HYDRAULIC FRACTURING REVIEW AND CONSULTATION



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Disciplines:

- Aboriginal wisdom
- Economics
- Environmental geography
- Water science
- Environmental science
- Public health
- Social science
- Social ecology
- Petroleum geology
- Geoscience
- Law (including Aboriginal law)
- Natural gas industry

290 Registered Stakeholders

238 Formal Submissions

170 Responses to 10 Discussion
Papers

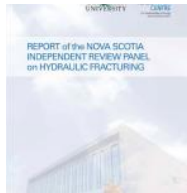
>1200 attendees at 13 public
meetings

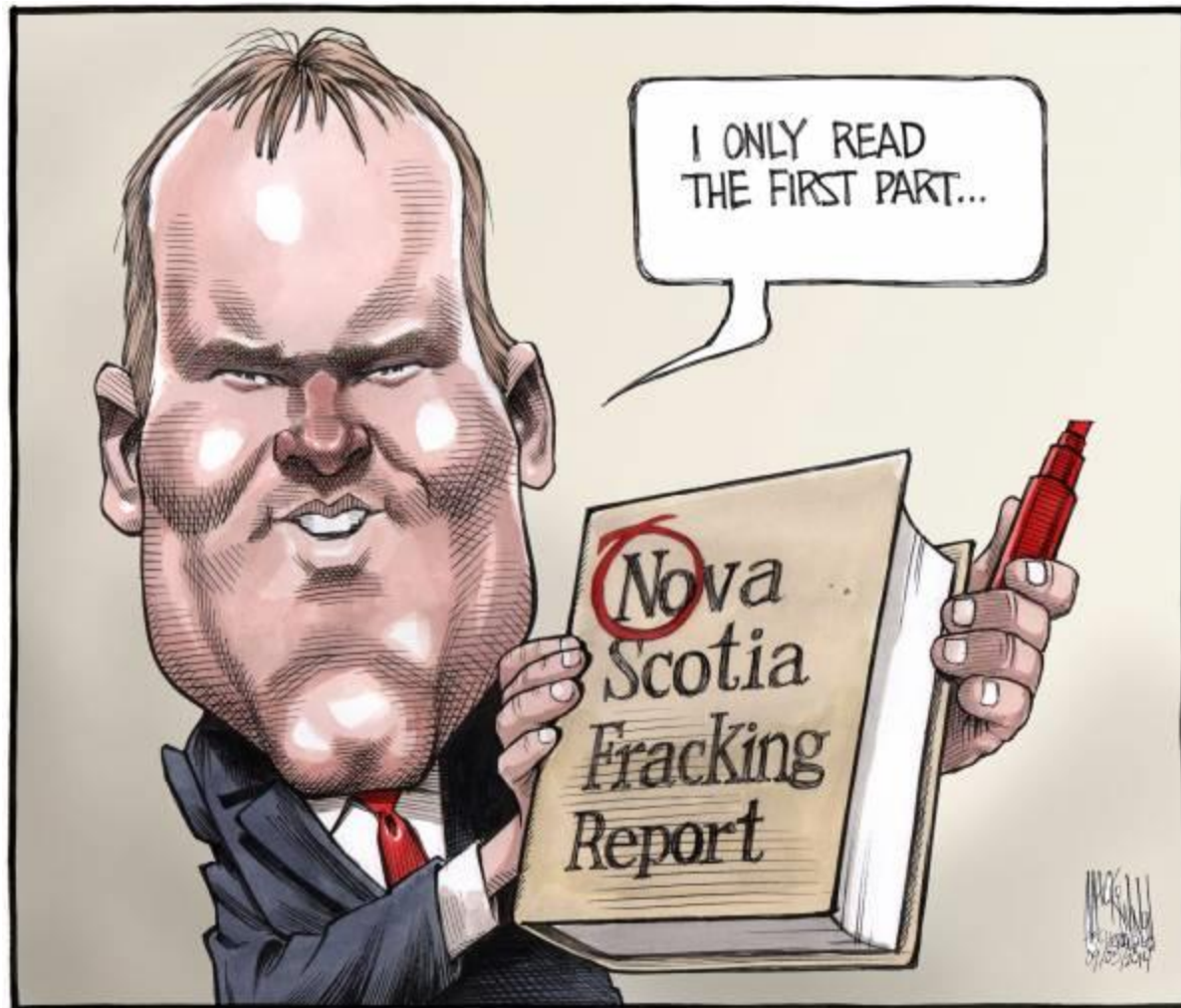


Top Level Recommendations*

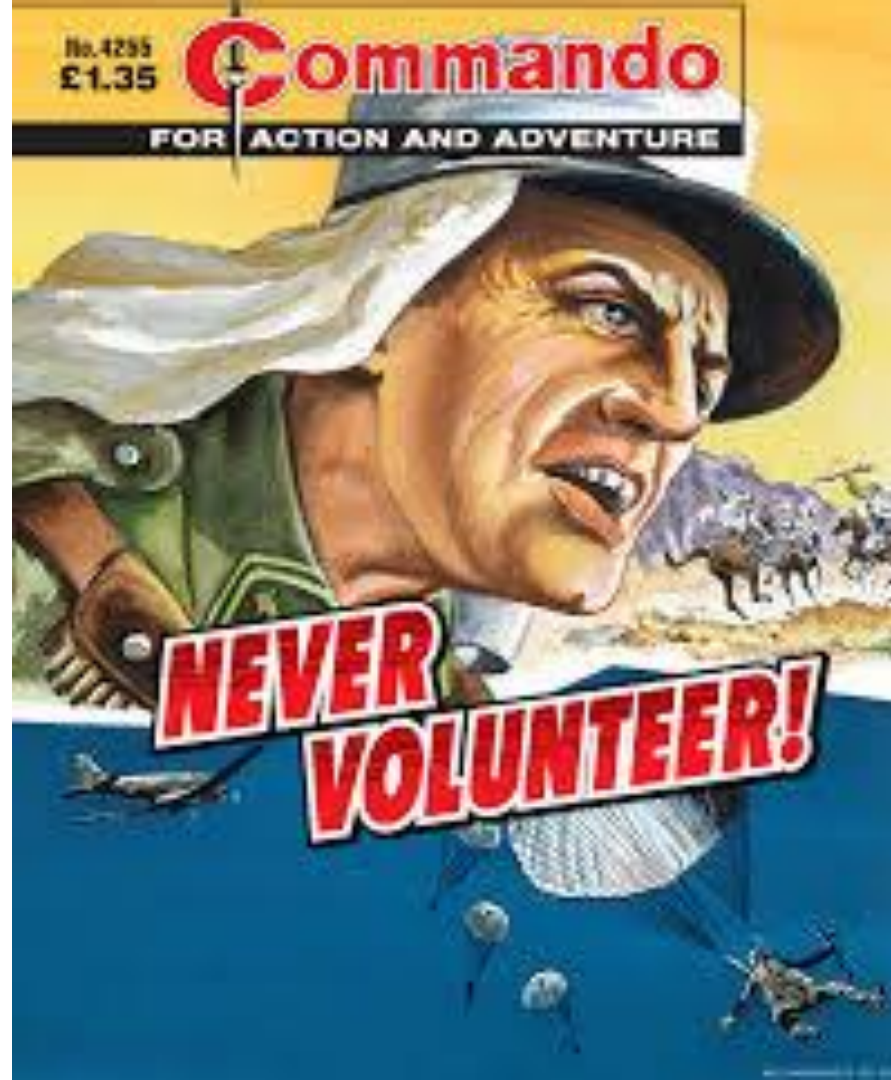
- Based on the analysis described in this Report a significant period of learning and dialogue is now required at both provincial and community levels, and thus hydraulic fracturing for the purpose of unconventional gas and oil development should not proceed at the present time in Nova Scotia.
- Independently conducted research of a scientific and public participatory nature is required to model economic, social, environmental, and community health impacts of all forms of energy production and use - including any prospect of unconventional gas and oil development in Nova Scotia - at both provincial and community levels.
- Nova Scotia should design and recognise the test of a *community permission to proceed* before exploration occurs for the purpose of using hydraulic fracturing in the development of unconventional gas and oil resources.

[*There were also 29 'contingent specific recommendations' subject to the above](#)





The lesson of this parable....



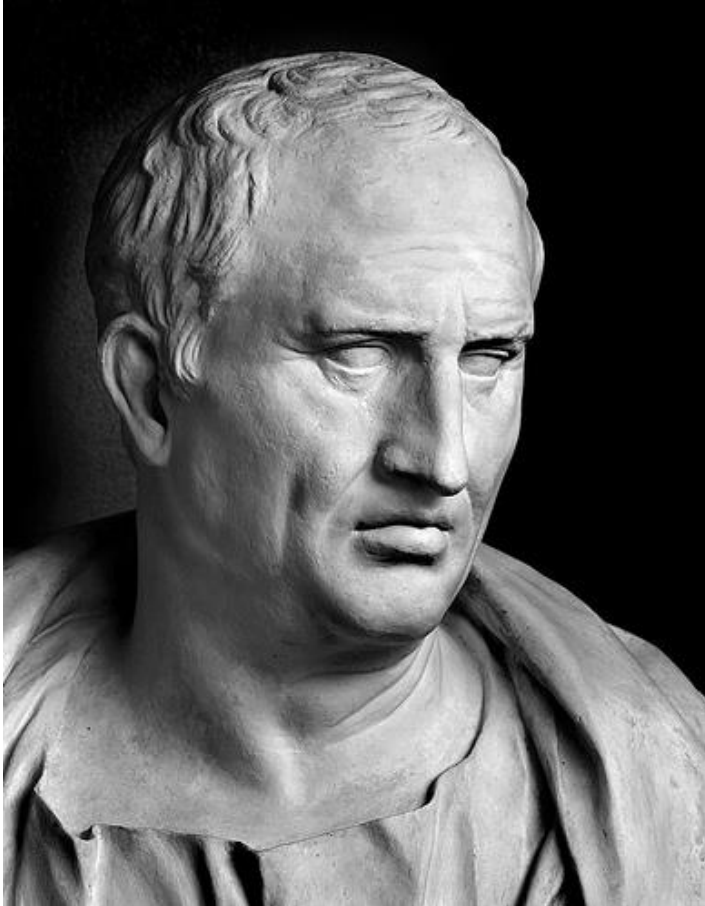
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Hydraulic fracturing - integrating public participation with an independent review of the risks and benefits

Wheeler et al (2015), Energy Policy 85, 299-308

“.....the public participatory and independent scientific review process described here also suggests that shifts in risk governance and democratic practice may be required prior to natural resource development in jurisdictions where there is polarisation of opinion and low trust in industry and government. But.....there is no guarantee that political decisions will follow the logic of processes such as we have described in this paper, however well designed and executed.”

SIX MISTAKES OF MANKIND

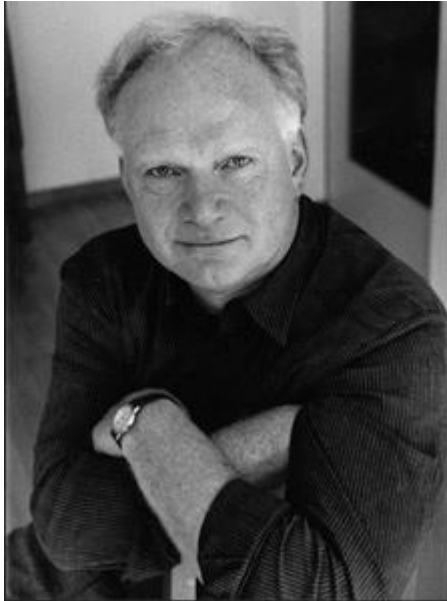


***"Six mistakes mankind keeps making century after century:
Believing that personal gain is made by crushing others;
Worrying about things that cannot be changed or corrected;
Insisting that a thing is impossible because we cannot accomplish it;
Refusing to set aside trivial preferences;
Neglecting development and refinement of the mind;
Attempting to compel others to believe and live as we do."***

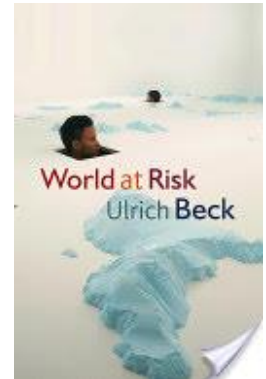
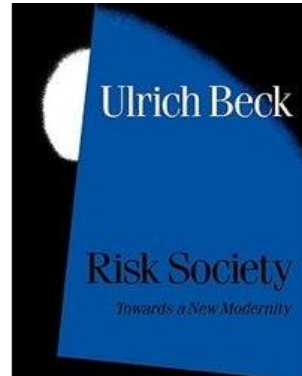
Marcus Tullius Cicero 106-43 BC

Some thoughts on managing risk

THE RISK SOCIETY - ULRICH BECK



“Neither science, nor the politics in power, nor the mass media, nor business, nor the law nor even the military are in a position to define or control risks rationally.”



Runaway world: How globalization is reshaping our lives

- Tony Giddens, 1999

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“Risk needs to be disciplined, but active risk-taking is a core element of a dynamic economy and an innovative society.”

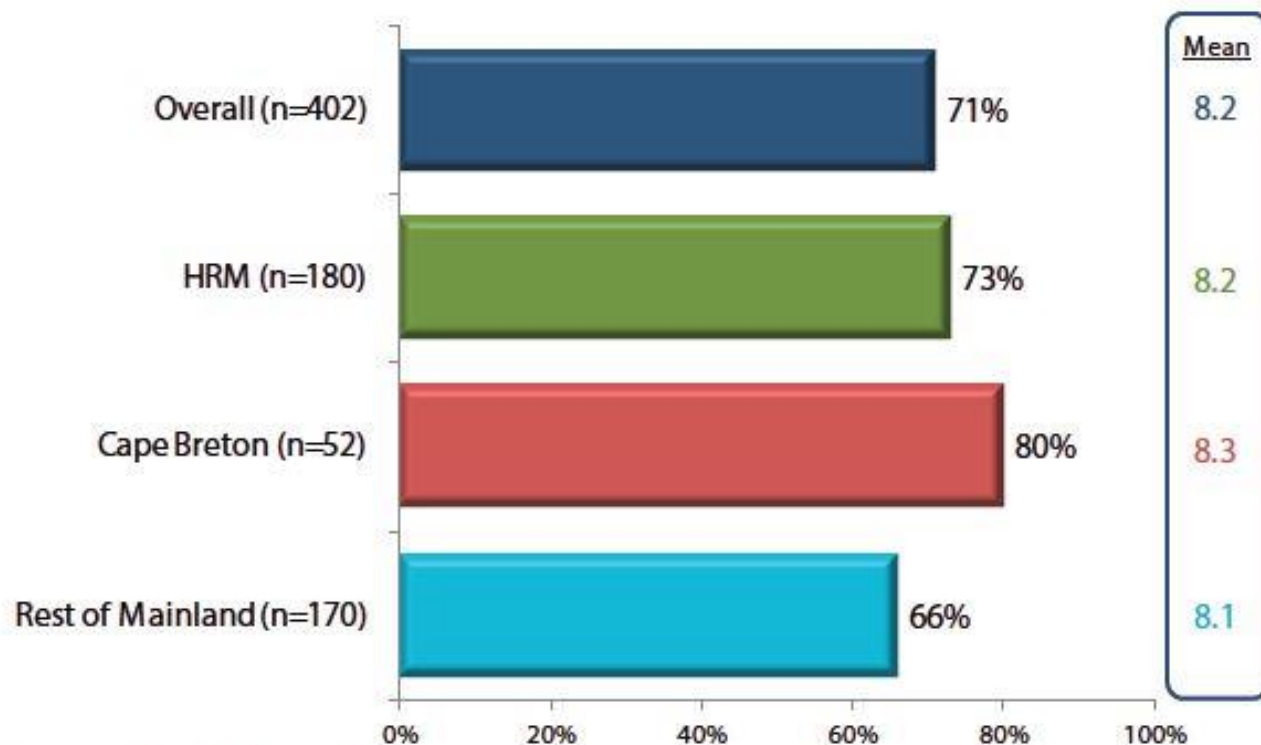


One Nova Scotia?



*“...the single most significant impediment to change and renewal is the **lack of a shared vision and commitment to economic growth** and renewal across our province and among our key institutions and stakeholder communities.”*

Importance That Nova Scotia's Natural Resources Be Used to Generate Wealth in the Province

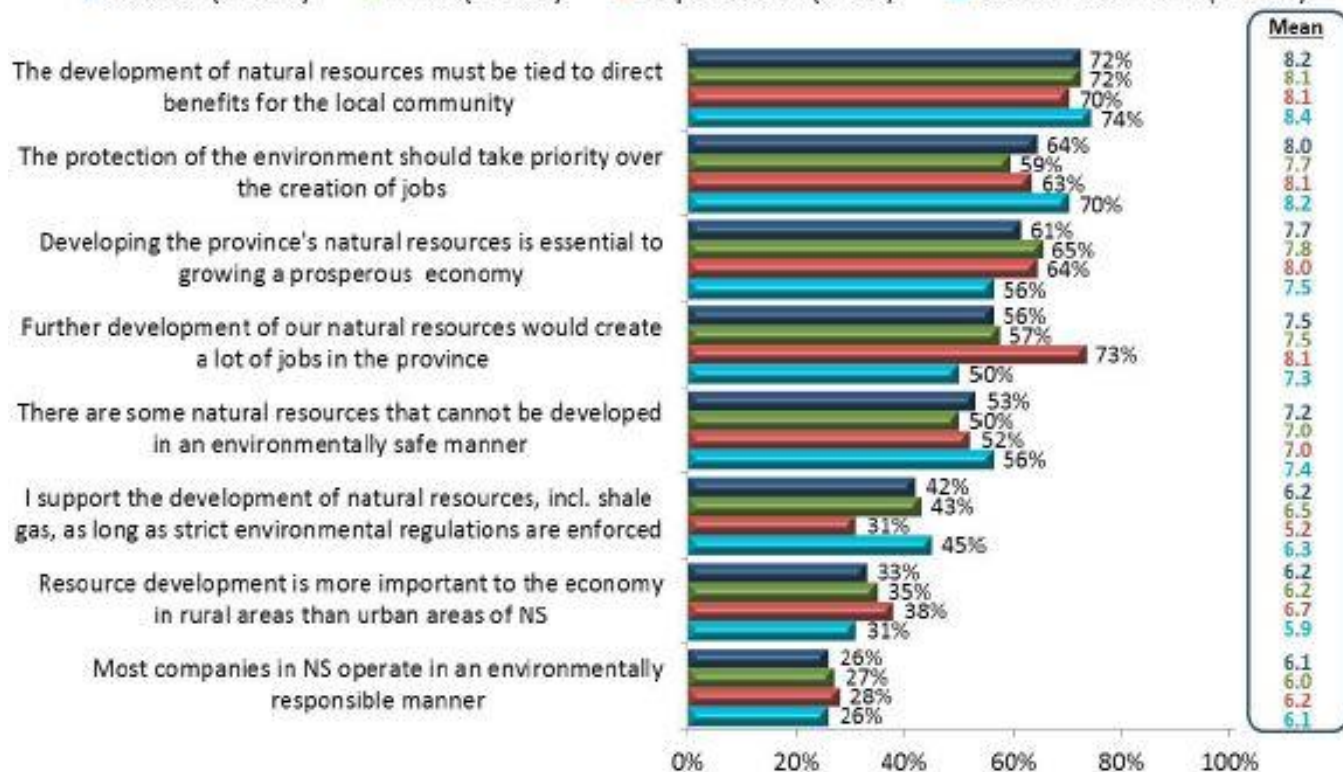


Q.7: On a scale of "1" to "10", where "1" represents not at all important and "10" represents critically important, how important is it that the Nova Scotia's natural resources be used to generate wealth in this province?

Opinion of Statements

Top 3 Box Rating (8-10) on 10-pt Scale: 1=Completely disagree, 10=Completely agree

■ Overall (n=402) ■ HRM (n=180) ■ Cape Breton (n=52) ■ Rest of Mainland (n=170)



Q.8a-g, j-k: Using a scale of "1" to "10" where "1" represents completely disagree and "10" represents completely agree, please indicate the degree to which you either agree or disagree with each of the following statements:

THE IMPORTANCE OF VOLUNTARINESS, CONTROL AND FAIRNESS

- Sandman 1987

“risks that kill you are not the risks that frighten or anger you.....”

*“When people are treated with fairness and honesty and respect for their right to make their own decisions, they are a lot less likely to overestimate small hazards.....But **when people are not treated with fairness and honesty and respect for their right to make their own decisions, there is little risk communication can do to keep them from raising hell – regardless of the extent of the hazard.**”*

- Voluntariness (self-imposed risk)
- Control (personally managed risk)
- Fairness (equitably distributed risk)

Risk perception, social trust, and public participation in strategic decision making

- Frewer 1999

“Ethical concerns, trust and distrust (in scientific institutions, risk regulators and information providers) and perceptions of social exclusion from risk-management processes should be incorporated into theoretical models used to explain the evolution of public resistance to emerging technologies.”

AMPLIFICATION OF PERCEIVED RISKS

- Kasperson *et al* 1988)

“Hazards interact with psychological, social, institutional, and cultural processes in ways that may amplify or attenuate public responses to the risk or risk event....Amplification occurs at two stages: in the transfer of information about the risk, and in the response mechanisms of society. Signals about risk are processed by individual and social amplification stations, including the scientist who communicates the risk assessment, the news media, cultural groups, interpersonal networks, and others.”

1 Transfer of Information

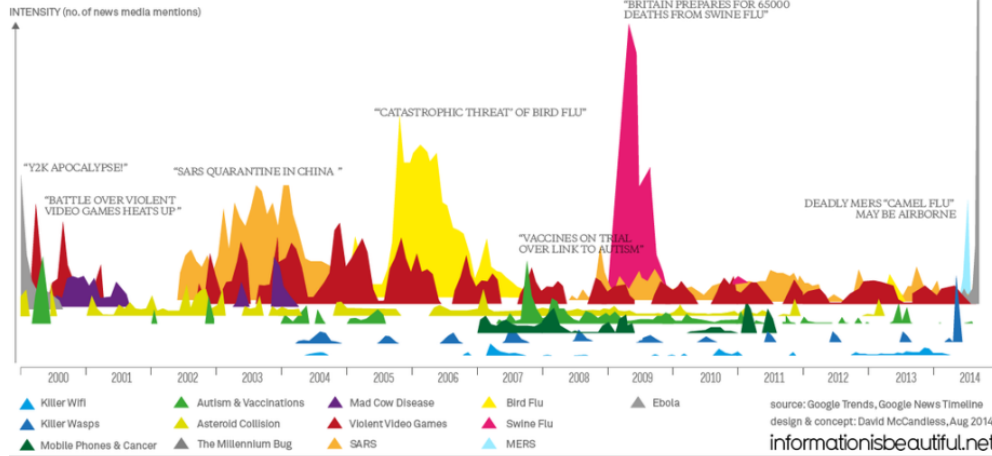
2 Social Response

Processes

- Source
- News media
- Group memberships
- Social networks

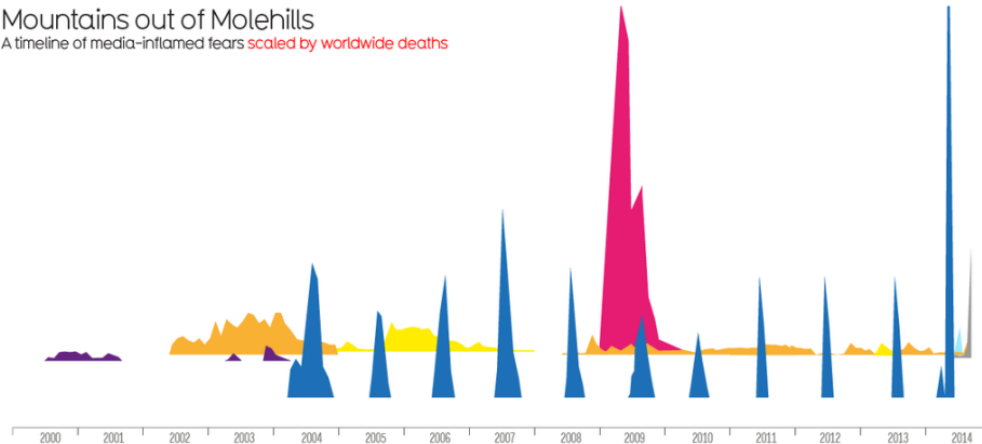
Mountains out of Molehills

A timeline of media-inflamed fears



Mountains out of Molehills

A timeline of media-inflamed fears scaled by worldwide deaths



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Swine flu (dark pink) – 18550
deaths worldwide

Killer wasps (blue) - 11,000

SARS quarantine in China

(orange) – 774

Catastrophic threat of bird flu
(yellow) – 386

Mobile phones and cancer (dark
green)- 0

Violent video games (red) – 0

David McCandless
<http://www.informationisbeautiful.net/about/>

CONCLUSIONS

- In the absence of social capital, natural capital (resource) development may be significantly inhibited
- Perceptions of risk are socially constructed and mediated by who carries the message, how messages are amplified, how risks and benefits are distributed, and whether there is any community control



SUSTAINABLE DEVELOPMENT OF NATURAL RESOURCES: PRINCIPLES TO CONSIDER

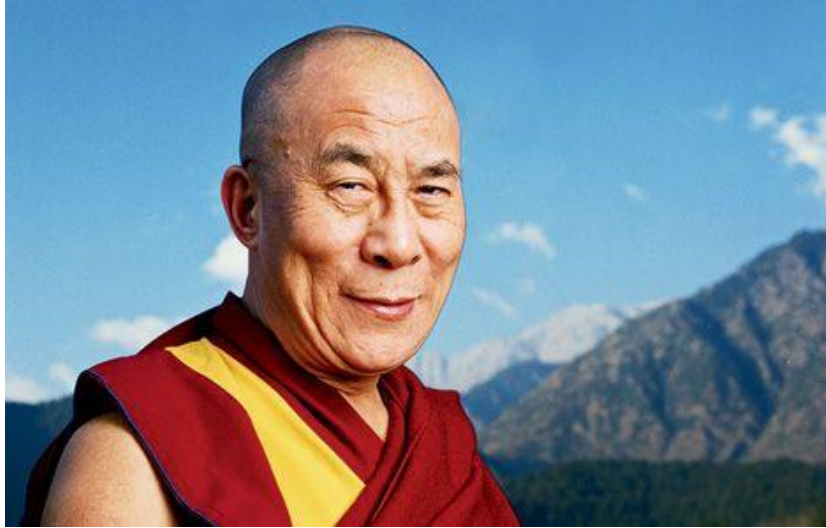
- Develop an accepted Canadian version of the *Precautionary Principle* fully embracing Aboriginal wisdom and rights
 - Recognises the new political, legal & moral reality in Canada
- Establish a new principle of *Community Permission to Proceed*
 - Codifies existing industrial best practice
 - Requires fair sharing of risks and rewards
 - Embraces Aboriginal wisdom
 - Removes temptation to impose or coerce development

See: United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

Etuaptmumk – ‘two eyed seeing’ (Albert Marshall)

Netuklimk – ‘achieving adequate standards of community nutrition and economic well-being without jeopardizing the integrity, diversity, or productivity of our environment’ (UINR)

A FINAL WORD FROM THE DALAI LAMA



“The reality today is that we are all interdependent and have to co-exist on this small planet. Therefore, the only sensible and intelligent way of resolving differences and clashes of interests, whether between individuals or nations, is through dialogue.”