

# Health Impact Assessment *in the Energy Sector* *- is this the better way?*

BC Lung Association 2014 Air Quality and Health Workshop:  
“Air Quality and Health Impacts of Energy  
Resource Extraction, Processing, and Transportation”  
March 10, 2014

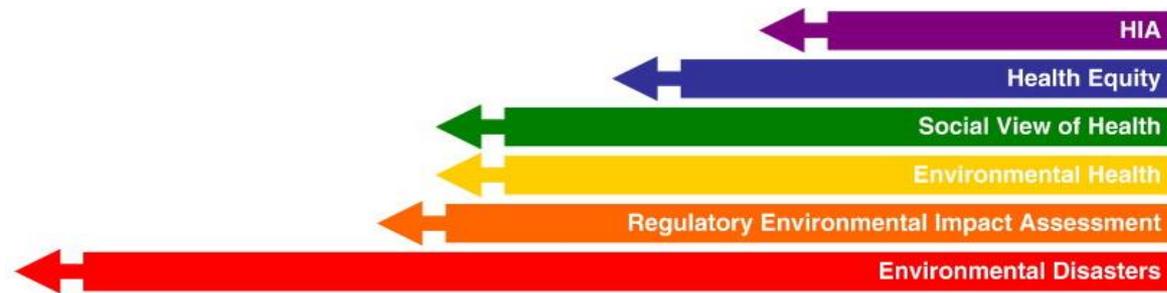
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# Disclosure

- I heat my home with natural gas
- I light my home with electricity from the power grid
- I commute by car (gas), transit (diesel, electricity), walking (shoes with synthetic rubber compounds)
- I eat oranges from California...
- .....

# Presentation Outline

- Why the interest in Health Impact Assessment
  - How we got to where we are today
    - Environmental impact assessment (EIA)
    - Human health risk assessment (HHRA)
  - What is HIA
- Examples of HIA in the Energy Sector
- Where do we go from here



1950s	1960s	1970s	1980s	1990s	2000s
1956 Clean Air Act (UK)	1962 Silent Spring	1972 Lake Pedder Dam controversy (Australia)	1980 The Black Report (UK)	1990 Concepts & Principles of Equity in Health	2001 enHealth HIA Guidelines (Australia)
1959 Minamata Bay (Japan)	1969 Santa Barbara Channel (USA)	1972 The Indian Wildlife (Protection) Act	1980 International Association for Impact Assessment formed	1990 Environmental Protection Act (UK)	2004 Equity Focused HIA Framework (Australia)
	1969 US National Environmental Policy Act (USA)	1974 Lalonde Report (Canada)	1984 Bhopal (India)	1990 Canadian Environmental Assessment Act	2005 Health included in IFC Performance Standards
	1969 Cuyahoga River Fire (USA)	1974 Environmental Protection (Impact of Proposals) Act (Australia)	1986 Ottawa Charter	1992 Asian Development Bank HIA Guidelines	2005 Guide to HIA in the Oil and Gas Sector
		1978 Seveso (Italy)	1986 Chernobyl (Ukraine)	1994 Framework for Environmental and Health IA (Australia)	2006 Bangkok Charter
		1978 Love Canal (USA)	1989 Exxon Valdez Oil Spill (USA)	1995 EU Treaty Article 129	2007 HIA's use included in Thailand's Constitution
		1978 WHO Seminar on Environmental Health Impact Assessment (Greece)		1995 Intersectoral Action for Health (Australia)	2007 1 <sup>st</sup> HIA in the Americas Workshop (USA)
		1978 Declaration of Alma Ata		1996 HIA: An idea whose time has come?	2008 WHO Commission on the Social Determinants of Health: Closing the Gap in a Generation
		1979 Three Mile Island (USA)		1997 Jakarta Declaration	
				1998 Independent Inquiry into Inequalities in Health (UK)	2009 Montara West Atlas Oil Spill (Australia)
				1998 1 <sup>st</sup> HIA Conference (UK)	
				1998 Merseyside Guidelines for HIA	
				1998 The Solid Facts	
				1999 Gothenburg Consensus Paper on HIA	

## Selective timeline of the development of HIA

From:  
 B. Harris-Roxas, E. Harris / Environmental Impact Assessment Review 31 (2011) 396–403

# What have we achieved (1)

- Environmental assessment legislations of some form at federal, provincial, and territorial levels
- Well established environmental impact assessment procedures and processes
- Risk assessment (HHRA) became highly specialized skills with “assumed” scientific rigor

## What have we achieved (2)

- Human health said to be important, but more often than not assessments have
  - narrow focus on the direct impacts due to physical environment changes expected from a project
    - *Toxic substance / pollutant* exposure driven analysis
    - “Vulnerable” population defined narrowly by biological characteristics (age, disease status)
  - Economic and social considerations mentioned but analysis often lack depth and without intentional attempts to link to health
  - Collaboration between environment and health expertise at times challenging – different paradigm
  - Continued public distrust in spite of well defined processes

# Environmental (Impact) Assessment

- The process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made.  
[http://www.iaia.org/publicdocuments/special-publications/Principles%20of%20IA\\_web.pdf](http://www.iaia.org/publicdocuments/special-publications/Principles%20of%20IA_web.pdf)
- Environmental assessment provides an integrated process for identifying and evaluating a reviewable project's potential adverse effects (environmental, social, health, heritage, and economic) and avoiding or mitigating any such effects where practicable. (BC EAO)  
[http://www.eao.gov.bc.ca/pdf/EAO\\_User\\_Guide%20Final-Mar2011.pdf](http://www.eao.gov.bc.ca/pdf/EAO_User_Guide%20Final-Mar2011.pdf)
- A person shall submit an assessment containing ... the detrimental and beneficial impact upon the environment of all or any of (BC MoE EIA Reg)
  - (a) water quality, (b) air quality, (c) land use, (d) water use, (e) aquatic ecology, and (f) terrestrial ecology.[http://www.bclaws.ca/EPLibraries/bclaws\\_new/document/ID/freeside/23\\_330\\_81](http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/23_330_81)

# Health Impact Assessment

<https://www.iaia.org/iaia/wiki/hia.ashx>

“A combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population.” ([Gothenburg Consensus Paper 1999](#))

HIA is intended to produce a set of evidence-based recommendations to inform decision-making.

HIA seeks to **maximise the positive** health impacts and **minimise the negative** health impacts of proposed policies, programs or projects.

# EIA and HIA Compared

## EIA

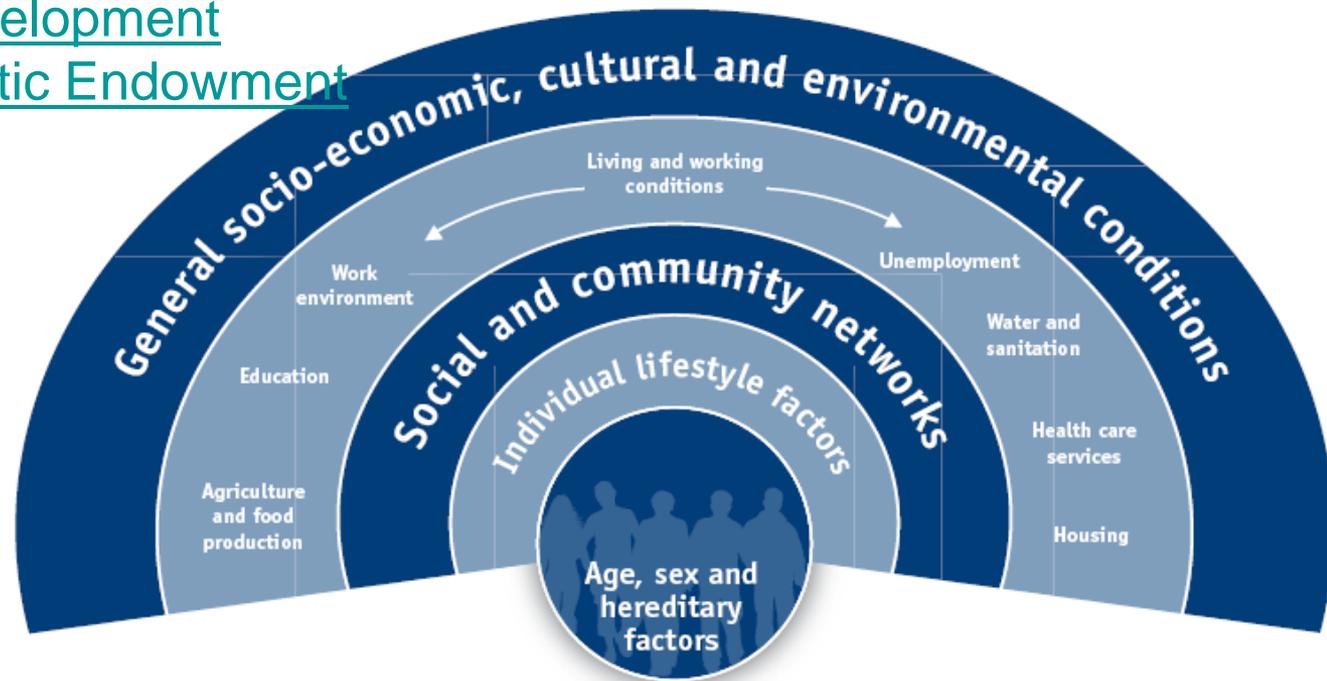
- Legislated mandate
- Similar process
  - Screening, scoping, analysis, recommendations, monitoring
- Start from the stuff (pollutant) that would be released (HHRA)
- Focus on the possible direct impacts from the altered physical environment
- Human health only a (small) part of a larger but often fragmentary exercise

## HIA

- Mostly voluntary
- Similar process
  - Screening, scoping, analysis, recommendations, monitoring
- Start from the people that might be affected
- Interested in the possible impacts through all the determinants of health
- Integrate human development, equity, and environmental sustainability needs

# Comprehensive Approach to Health Determinants of Health in Canada

- Income and Social Status
- Social Support Networks
- Education and Literacy
- Employment/Working Conditions
- Social Environments
- Physical Environments
- Personal Health Practices and Coping Skills
- Healthy Child Development
- Biology and Genetic Endowment
- Health Services
- Gender
- Culture



Source:  
PHAC 2011,  
CPHO Report 2008

# HIA Core Values

Stakeholder Participation Working Group of the 2010 HIA in the Americas Workshop. Best Practices for Stakeholder Participation in Health Impact Assessment, Oakland, CA 2011

***Comprehensive*** approach to health

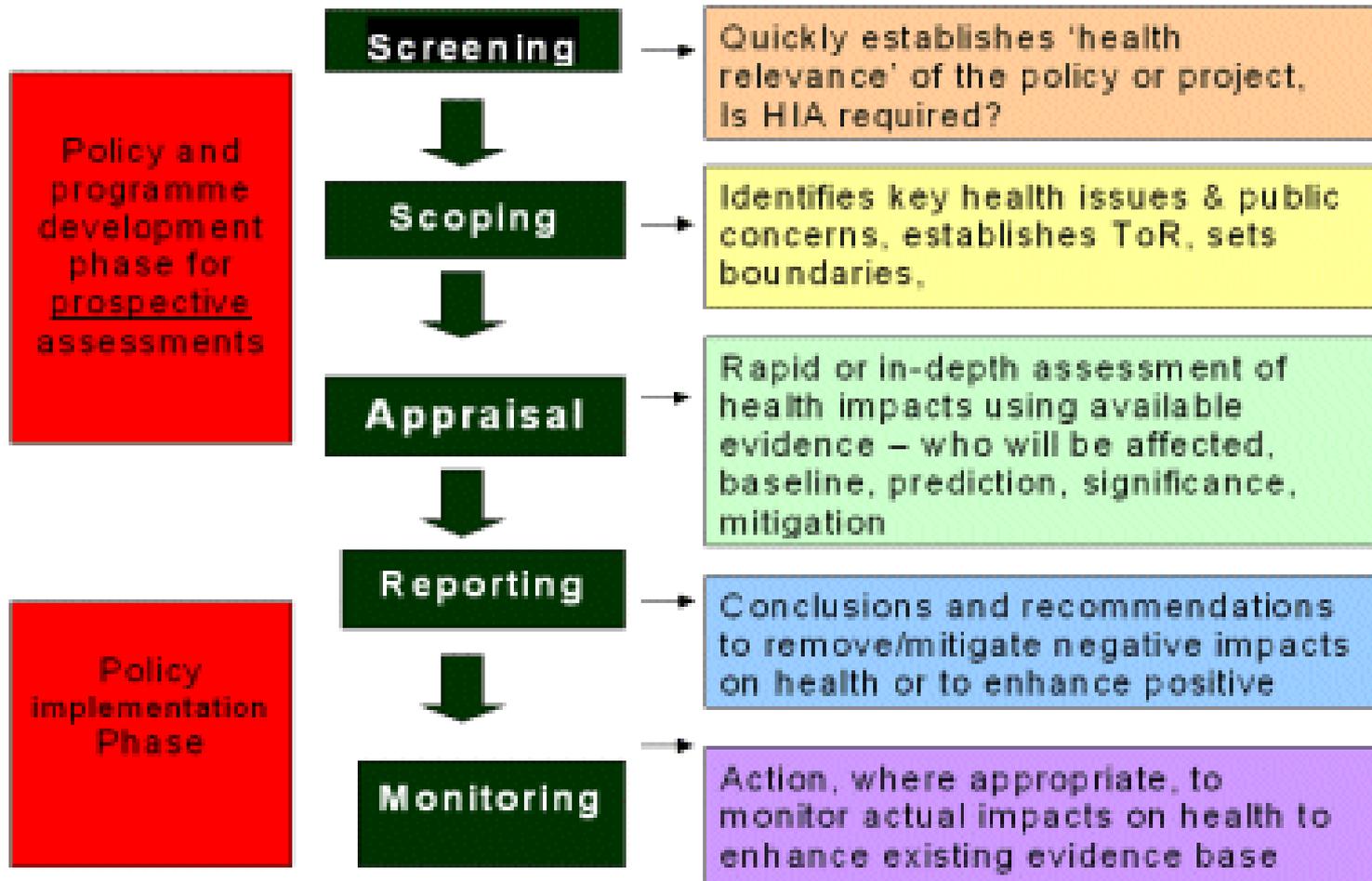
***Equity*** - Also interested on the distribution of the impact within the population

***Democracy*** - Emphasize people's rights to participate in a transparent process

***Sustainable Development*** - Considerations for both short-term and long-term, direct and indirect impacts

***Ethical Use of Evidence*** - Quantitative and qualitative evidence needs to be rigorous and based on different scientific disciplines and methodologies

# HIA Procedure



# HIA Examples in the Energy Sector

## **Biomass Energy Project (Placer County, Ca, 2012)**

[http://www.healthimpactproject.org/resources/body/HIA-of-Cabin-Creek-Biomass-Energy-Facility\\_Sequoia-Foundation.pdf](http://www.healthimpactproject.org/resources/body/HIA-of-Cabin-Creek-Biomass-Energy-Facility_Sequoia-Foundation.pdf)

- Redirecting forest debris from slash burning to biomass energy plant

## **Proposed Alaska North Slope Oil Development (2007)**

<http://advance.captus.com/planning/hia2/pdf/Module2/Results%20of%20Alaska%20North%20Slope%20HIA.pdf>

- First attempt to integrate HIA into US EIS process

## **Natural Gas Development, Battlement Mesa Co (2011)**

<http://www.garfield-county.com/environmental-health/battlement-mesa-health-impact-assessment-draft2.aspx>

- “Fracking” - with some wells planned close to residential areas

## **Coal and Clean Energy Options in Kentucky (2011)**

<http://www.healthimpactproject.org/resources/document/Coal-and-Clean-Energy-Optionsin-KY.pdf>

- Done by NGO. Advocate that Kentucky diversify its energy sources<sup>13</sup>

# Canadian Handbook on Health Impact Assessment

<http://www.hc-sc.gc.ca/fniah-spnia/pubs/promotion/ environ/handbook-guide2004/index-eng.php>



**Canadian Handbook on  
Health Impact Assessment:**

**Volume 1: The Basics**



Canada



**Canadian Handbook on  
Health Impact Assessment**

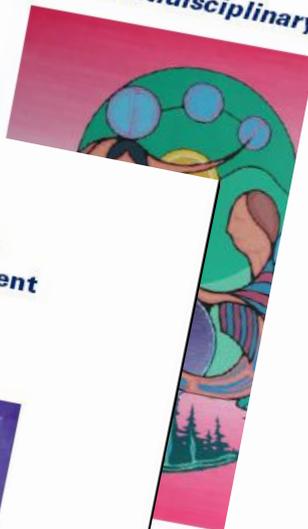
**Volume 2: Approaches  
and Decision-making**



Canada

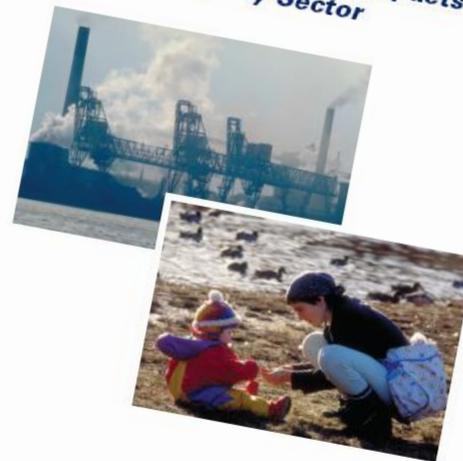
**Canadian Handbook on  
Health Impact Assessment**

**Volume 3:  
The Multidisciplinary Team**



**Canadian Handbook on  
Health Impact Assessment**

**Volume 4: Health Impacts  
by Industry Sector**



Canada

# Trans Mountain Expansion Project



- Application to NEB submitted Dec 2013
  - Over 2,000 mb in 8 volumes
- Attempted to insert an HIA perspective into an EA driven process
  - Separate “Community Health” technical report for addressing issues not explicitly covered in the “usual” EA documentations, for example,
    - mental wellbeing, drugs and alcohol, STI, GI illness, traffic injury, health care access, emergency response...
    - Aboriginal health (diet and nutrition)
  - Found in other sections of the document
    - AQ, HHRA, noise, ground water, social economic benefits
- Hard to located all the health related pieces.
- Highlights both the opportunities and challenges of integrating HIA and EA

# HIA – Slow in Gaining Traction

- **Misunderstood** by proponents and opponents equally
  - seen as a way to delay / deny projects
  - not understood as a decision support tool that could help maximize the positive and minimize the negative impacts
- **Lack of appreciation** by the public and policy makers on the determinants of health and how they are impacted by policies / projects
- **Few** places with **legislation** to support HIA

# HIA - Is this the better way?

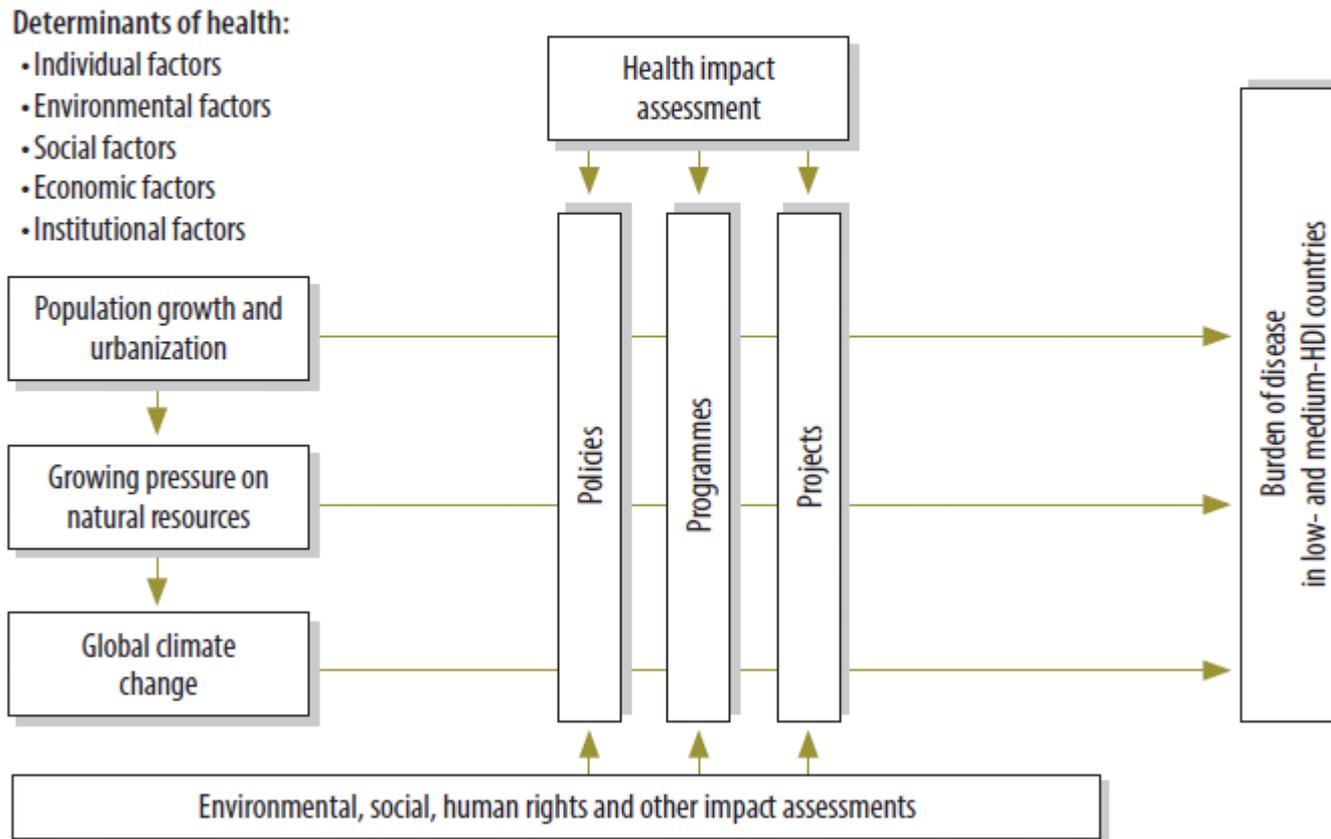
CANADIAN EXPERIENCES IN INSTITUTIONALIZING HEALTH IMPACT ASSESSMENT (HIA). (NCCHHP Report 2013) [http://www.ncchpp.ca/docs/2013\\_EIS\\_HIA\\_RepProvTerMeeting\\_En.pdf](http://www.ncchpp.ca/docs/2013_EIS_HIA_RepProvTerMeeting_En.pdf)

## ➤ Favourable conditions for implementing HIA

- 1. A strong link to higher levels of authority;
- 2. A rapid impact analysis process, but with reliable results;
- 3. An approach that relies more on incentives than coercion;
- 4. An approach based on supporting other sectors in achieving their goals, thus gaining their commitment to the process;
- 5. A legal basis, which constitutes a powerful incentive;
- 6. A prospective approach, aimed at seizing opportunities to influence the policy development process as early as possible;
- 7. Some degree of funding, even if minimal, for operations, knowledge production and evaluation.

# HIA – one of a number of impact assessment tools

Fig. 2. Health impact assessment as a decision-making tool for policies, programmes and projects designed to mitigate the adverse health effects from major drivers of global change



Source:

*Bull World Health Organ* 2013;91:298–305

# Differences in Paradigm and Language

- Quantitative versus Qualitative Evidence
- Is HIA just an extension of HHRA, with more complex risk functions?
- **The strength of HIA as a tool is the inclusion of both quantitative and qualitative evidence.** (E. O’Connell, F. Hurley / Public Health 123 (2009) 306–310)
  - Many risk factors do not have reliable dose–response functions available
  - Accounts for the value judgments that underlie what is quantified.
  - Multidisciplinary working a necessity for success

# The Future ?

## Integrated Impact Assessment?

Ultimately, maintaining the **vision** of what impact assessment is trying to achieve is **more important than the process.**

Impact assessments need to provide a forum for **effective** and **representative dialogue with stakeholders.**

Also they need to incorporate **quantitative** scientific data and **qualitative** information on health and environmental impacts to present it in a manner that decision-makers can understand and **weigh alongside** other considerations, such as **economic costs and benefits.**

Finally, they need to be robust enough to absorb and **withstand political pressures, maintaining independence** while meeting the needs of policy-makers and planners.

WHO "Health and Environment Managing the Linkages For Sustainable Development A Tool Kit for Decision Makers" 2008.

[http://whqlibdoc.who.int/publications/2008/9789241563727\\_eng.pdf?ua=1](http://whqlibdoc.who.int/publications/2008/9789241563727_eng.pdf?ua=1)

# The Future ? (cont'd)

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## Maximizing the effect of impact assessment (1)

- **Emphasis on participatory processes.**
  - Stakeholder inputs improve transparency and ownership of results.
- **Burden of disease and economic valuation of costs and benefits.**
  - Human health impacts summarized in quantifiable values provide powerful and easily-understood evidence to policymakers about tradeoffs, choices and risks.
- **Integration of qualitative evidence with quantitative measures.**
  - Locally-gathered qualitative and social evidence may add dimensions not captured in data, and may be critical where data are missing.

# The Future ? (cont'd)

WHO "Health and Environment Managing the Linkages For Sustainable Development A Tool Kit for Decision Makers"  
2008. [http://whqlibdoc.who.int/publications/2008/9789241563727\\_eng.pdf?ua=1](http://whqlibdoc.who.int/publications/2008/9789241563727_eng.pdf?ua=1)

## Maximizing the effect of impact assessment (2)

- **Diversity of approaches.**
  - Recognition that there is no single road map for assessment supports the right of country-level decision-makers to tailor their approach to local needs.
- **Consideration of policy alternatives and implementation.**
  - From the outset, assessment should consider policy alternatives so that root health and environment drivers are addressed.
  - When recommendations are made, assessment should consider measures realistically to support policy implementation, e.g. economic, voluntary, etc.

# HIA - Useful Resources

Health Impact Project

<http://www.healthimpactproject.org/>

Public Health England

[http://www.apho.org.uk/default.aspx?QN=P\\_HIA](http://www.apho.org.uk/default.aspx?QN=P_HIA)

NCCHPP (INSPQ)

[http://www.ncchpp.ca/54/Health\\_Impact\\_Assessment.ccnpps](http://www.ncchpp.ca/54/Health_Impact_Assessment.ccnpps)

The Society of Practitioners of HIA (SOPHIA)

<http://hiasociety.org/>

UCLA HIA Clearinghouse

<http://www.hiaguide.org/>

WHO

<http://www.who.int/hia/en/>

Thank you

Questions?