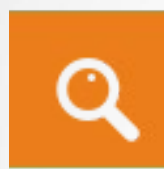


17th ERSCP in Portoroz, Slovenia



THE EUROPE WE WANT

17th European Roundtable on Sustainable Consumption and Production

Research | Experience | Development

14.-16. October 2014 | Portorož, Slovenia

Why do You Think You/We can Make Improvements In Society?

Thursday, October, 16, 2014

Prof. Donald Huisingh

Institute for a Secure and Sustainable Environment

University of Tennessee

Knoxville, Tennessee

donaldhuisingh@comcast.net

SKYPE; huisinghdon

Outline of this presentation

What are the roles

- *Of history in guiding us to sustainable futures?*
- *Of crises?*
- *Of good examples?*
- *Of alternative paradigms?*
- *Of creativity?*
- *Of ethical/spiritual values?*
- *How can we integrate all of these elements into holistic and integrated approaches to achieve equitable, post-fossil carbon societies, which are truly sustainable??*

Janus, the Roman God of gates and doors, beginnings and endings



"Collapse: How Societies Choose to Fail or Succeed"

&

"The World Until Yesterday"

**Diamond focused upon "societal"
collapses due to environmental, climate
change, hostile neighbors and trade
partners in assessing their responses
or lack of responses"**

He hoped we will learn from history!

*What can we
learn from
history?*

*What can we
learn from
history?*

*What can we
learn?*

*What can we
learn from
history?*

*What can we
learn?*

Can we learn?

What are some Indicators of Unsustainable Patterns?

- **Climate Changes;**
- **Ozone layer destruction;**
- **Species diversity losses;**
- **Water insecurity, spreading deserts, sea-level rising;**
- **Food insecurity;**
- **Toxic substances in food and water;**
- **Human population growth;**
- **Poverty, disease & corruption;**
- **Economic, Ecological and Political Crises;**
- **Human and Ecological Terrorism.**



What Roles have Crises had as Motivators for Making Changes?

- **Carson's "Silent Spring" – pesticides-(1962)**
- **Ozone layer thinning- halogenated substances-(1974 -1985)**
- **Bhopol – (1984)**
- **Colburn's "Our Stolen Future"- endocrine disrupters-(1995)**
- **Three Mile Island (1979) Chernobyl (1986)
Fukushima (2011) Nuclear reactor meltdowns-**
- **Smogs and Climate Change (1930 – Present)**
- **<http://www.worldwatch.org/brain/features/timeline/timeline.htm>**

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Air Pollution Episodes

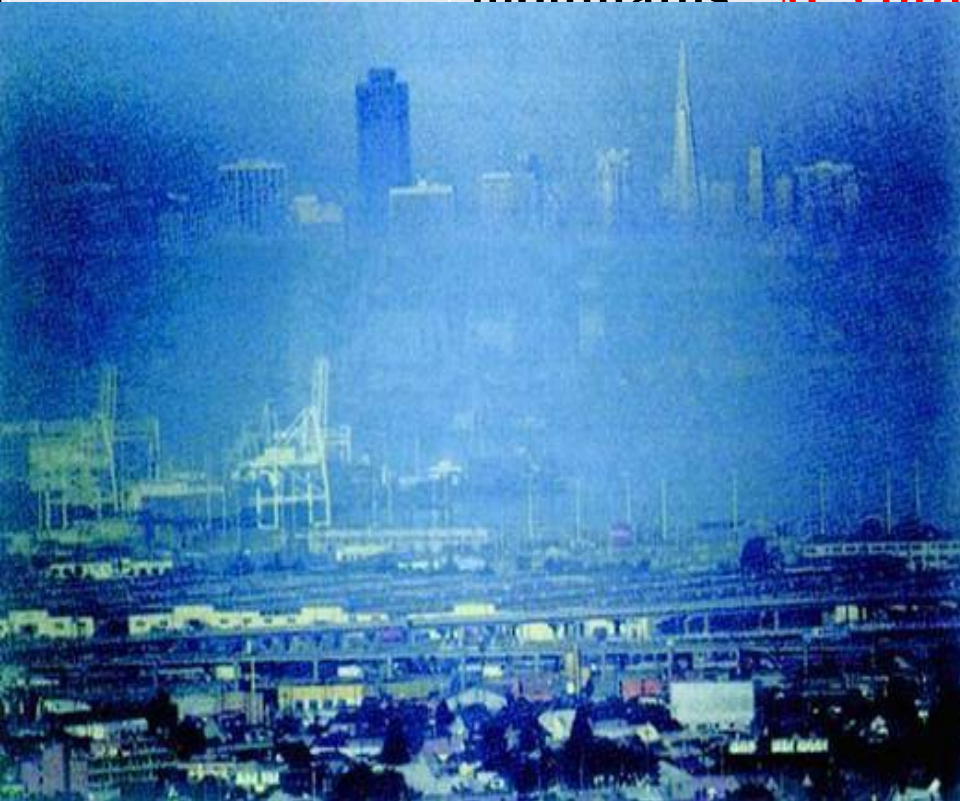
- **Many of the air pollution challenges that have been addressed were chronic, long-term problems;**
- **Sometimes we also had short-term smog episodes (Crises!!??)**
- **Did they motivate us to make changes?**

Six of the Top Ten Environmental Crisis Incidents in 20th Century

1930.12	Belgium	Meuse Valley fog
Causes	Combination of industrial air pollution and climatic conditions & pollutants: SO₂, SO₃, Particulates	
Consequence	Sixty-Three human deaths in one week; main cause: asphyxiation (shortness of breath).	



1943	Los Angeles, USA	Photochemical smog
Causes	Emissions of CH₄ , NO_x , CO from vehicles , emissions from oil refineries	
Consequences	75% of the citizens were seriously affected by respiratory and eye infections, millions of trees died in the high mountains: \$1.5 billion loss due to air pollution	

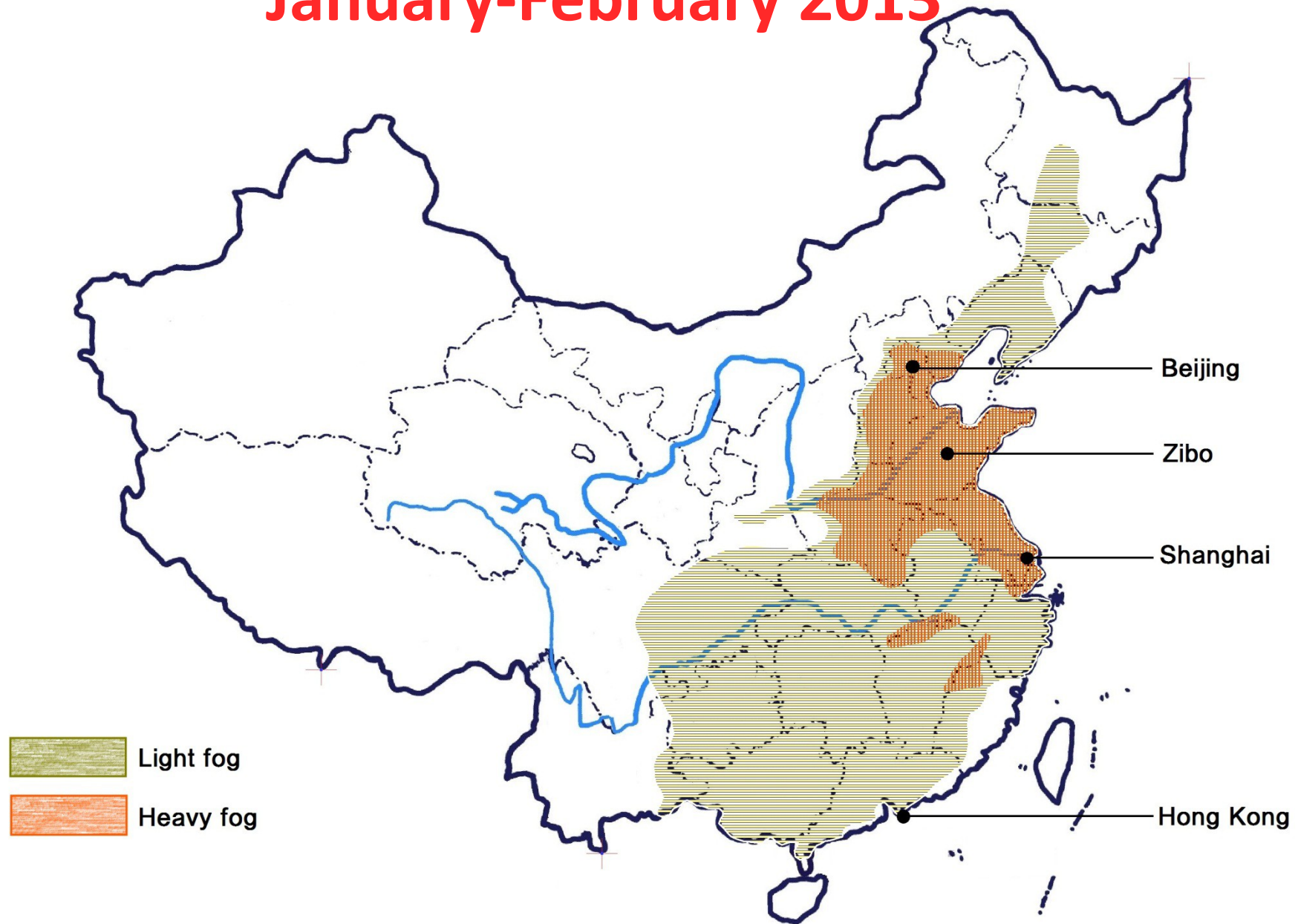


1952.12.5-9	London, UK	Great Smog
Causes	CO₂, CO, SO₂, TSP emissions from coal burning; vehicle exhaust —particularly from diesel-fuelled buses; & heavily polluted air from continental Europe	
Consequences	Four thousand human deaths in four days; symptoms: bronchitis, acute respiratory	



Great Smog of China

January-February 2013



Tian 'an Men
Square



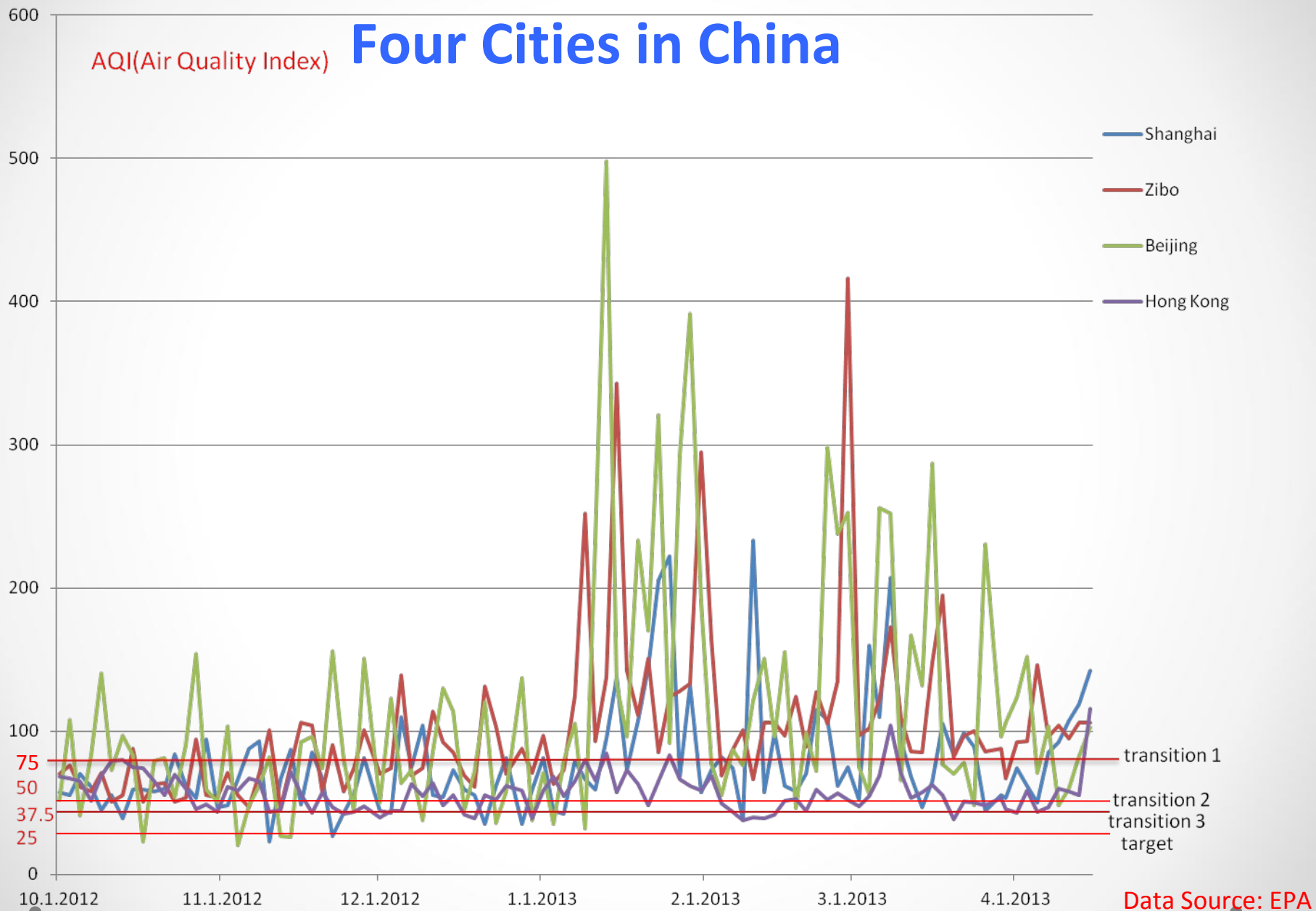
The Oriental Pearl TV
Tower

Zibo City



Shandong
University

The Air Quality Index of Four Cities in China



**The Chinese Government
is supporting its citizen's
involvement in SD with
the theme: “Cherish the
Earth's Resources: Change
the Developmental Model”**

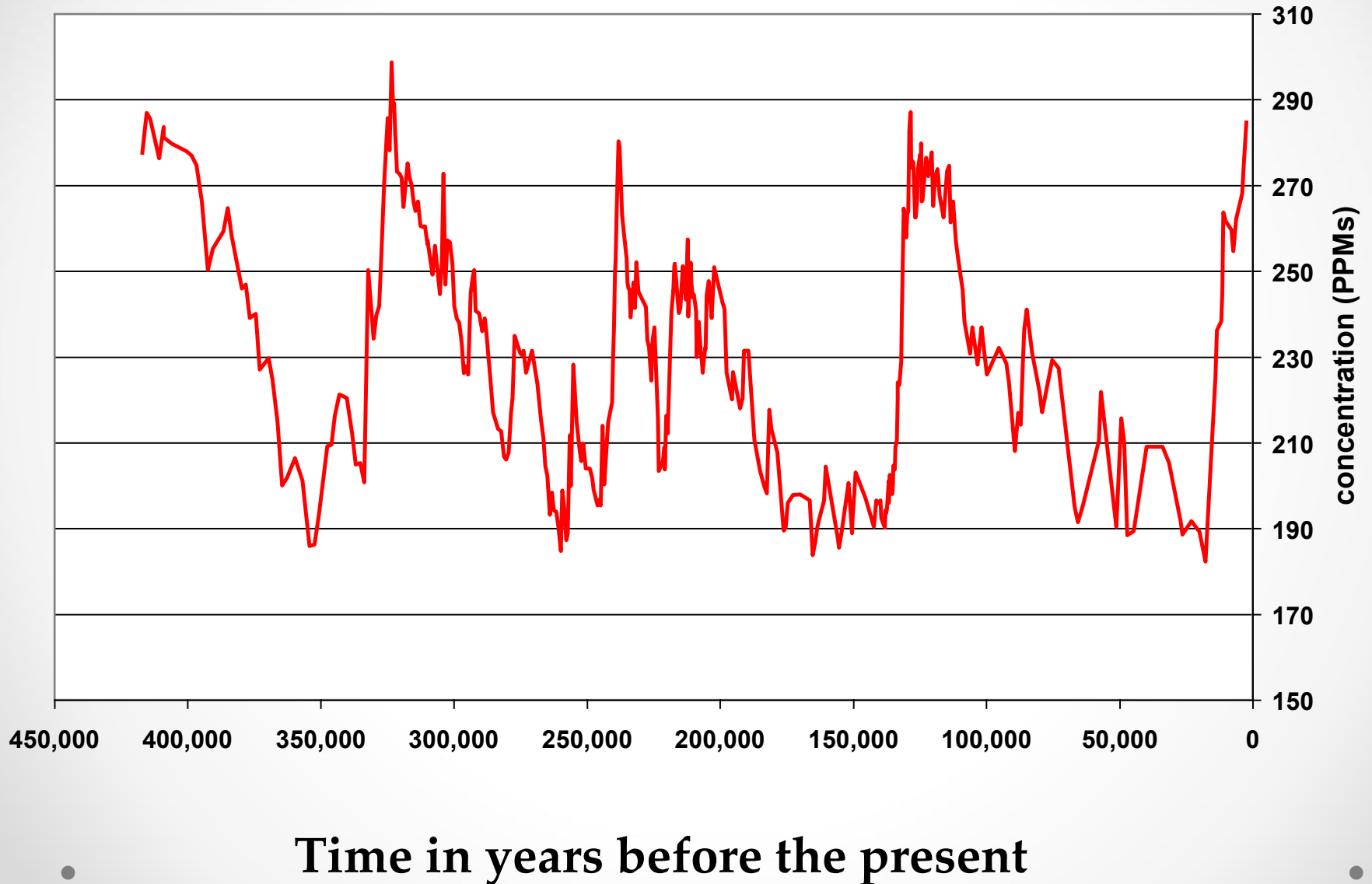
We were invited to develop special volumes of the Journal of Cleaner Production

- **How to prevent future smogs for China and other nations?**
- **How to reduce reliance upon fossil carbon-based systems**

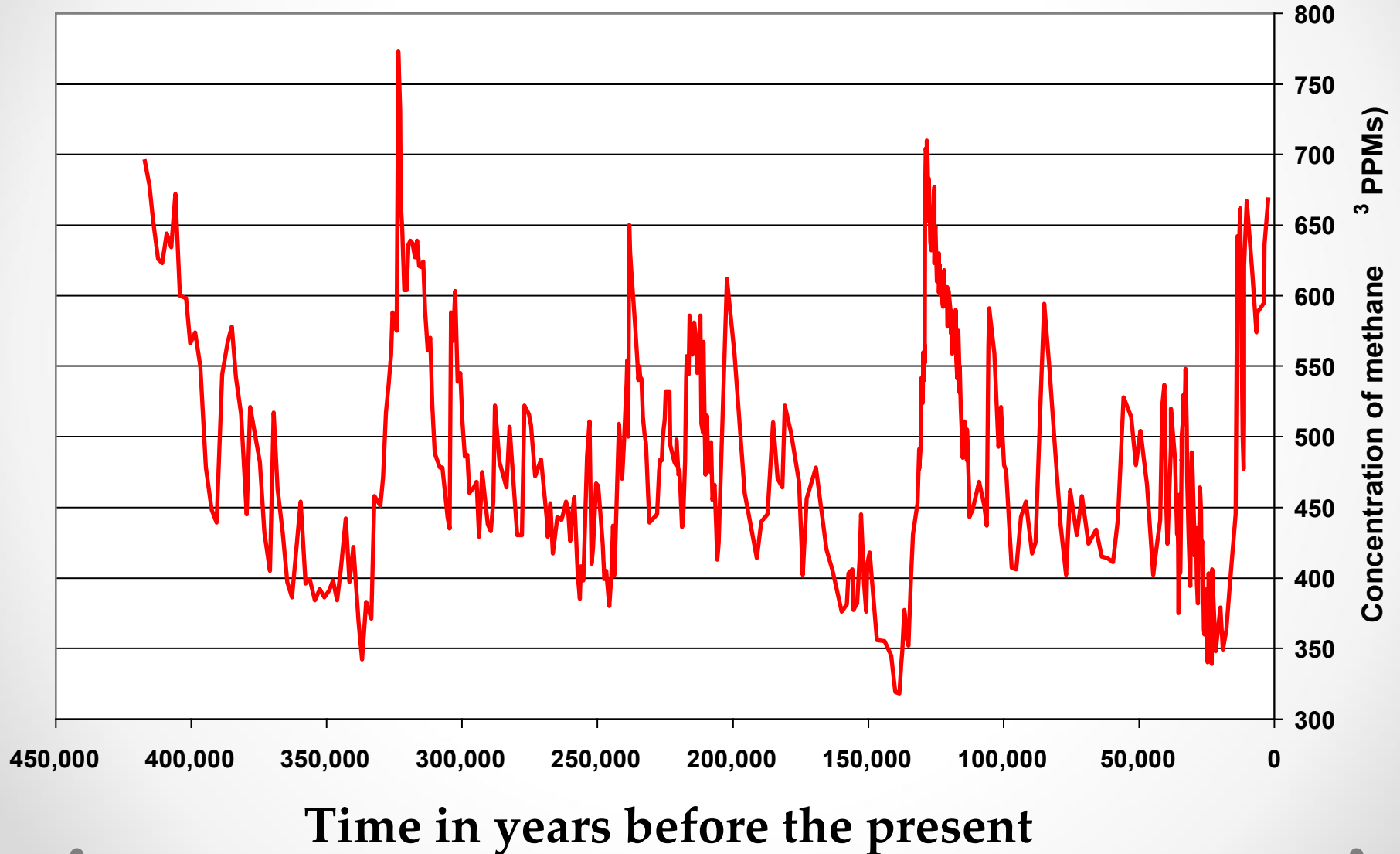
Janus, the Roman God of gates and doors, beginnings and endings



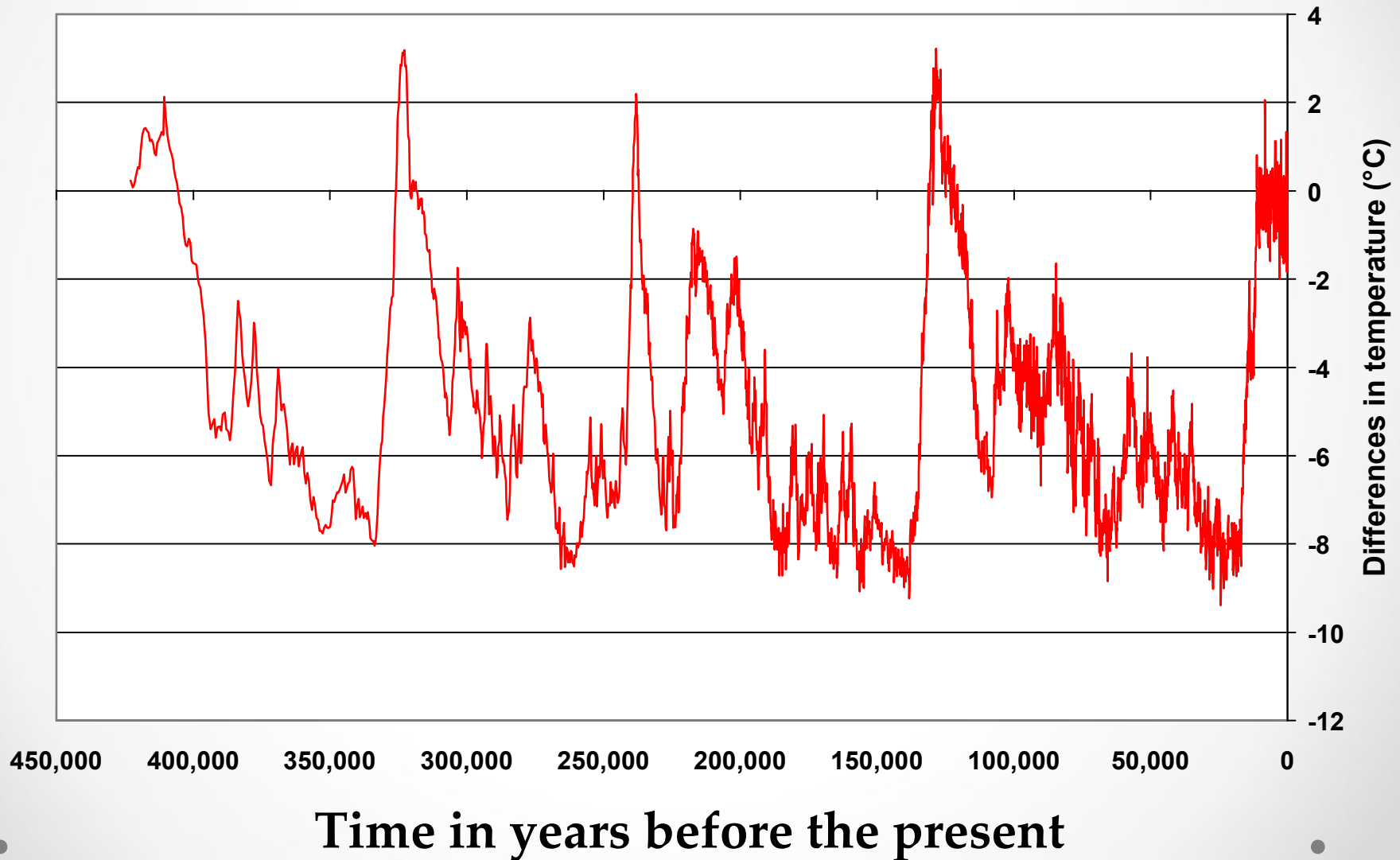
Concentration of carbon dioxide in the Antarctic ice



Methane concentration in the ice in Antarctica



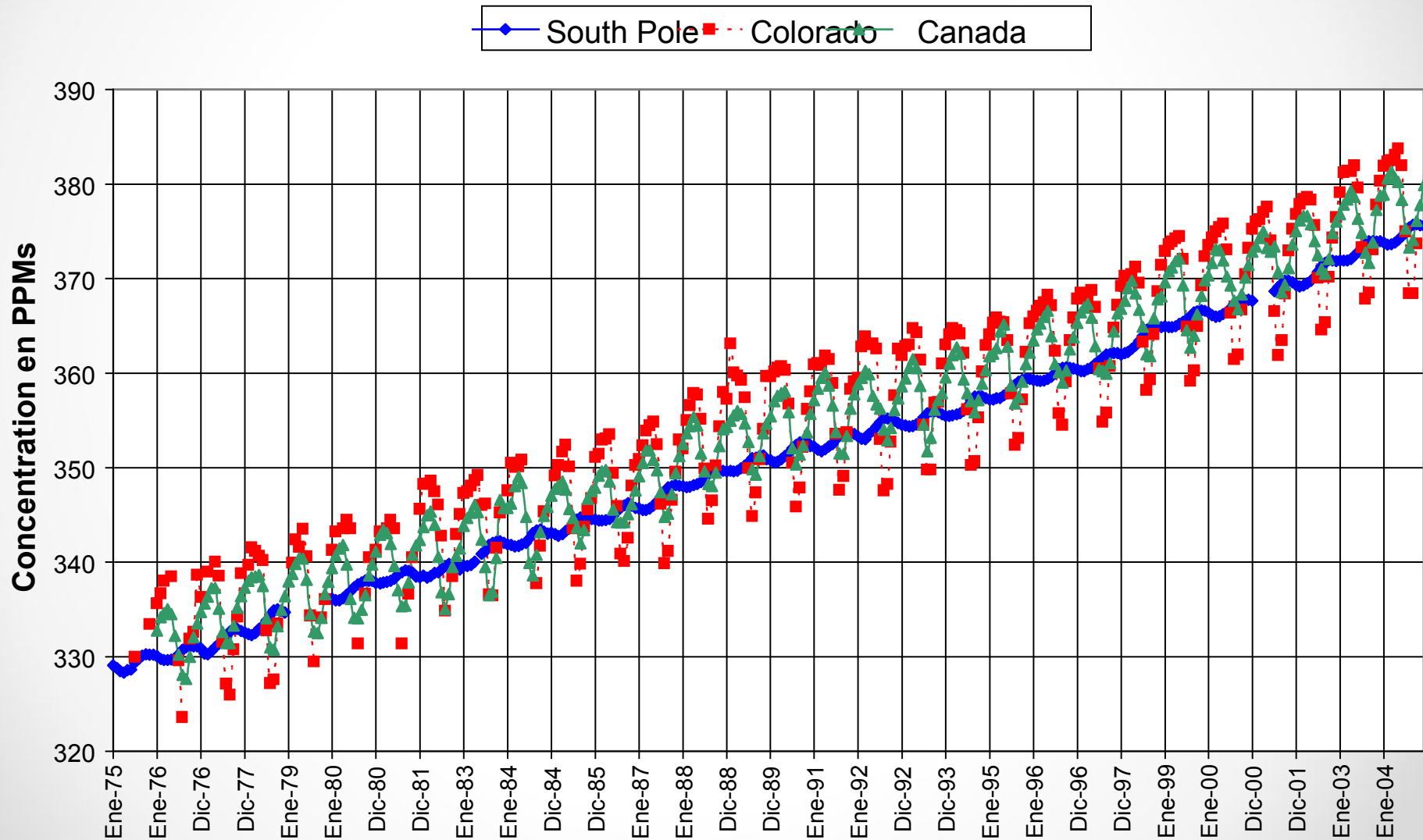
Atmospheric temperature variations as detected from the ice in Antarctica



Ranges and concentrations during 450,000 years

- Carbon dioxide concentration range =
(185 – 295 PPM) (2004 380 PPM)
Projected by 2050 to
be between 450 & 750 PPM!
- Methane concentration range =
(340 -760 PPB) (2004 1700 PPB)
Projected by 2050???
- Average temperature range
during this period = 10° C; how much
higher will it be in the next 100 – 300 years
is a big question??

Concentration of Carbon Dioxide as measured in Colorado, Canada and at The South Pole



Increase in Carbon Dioxide Concentration at Mauna Loa, Hawaii

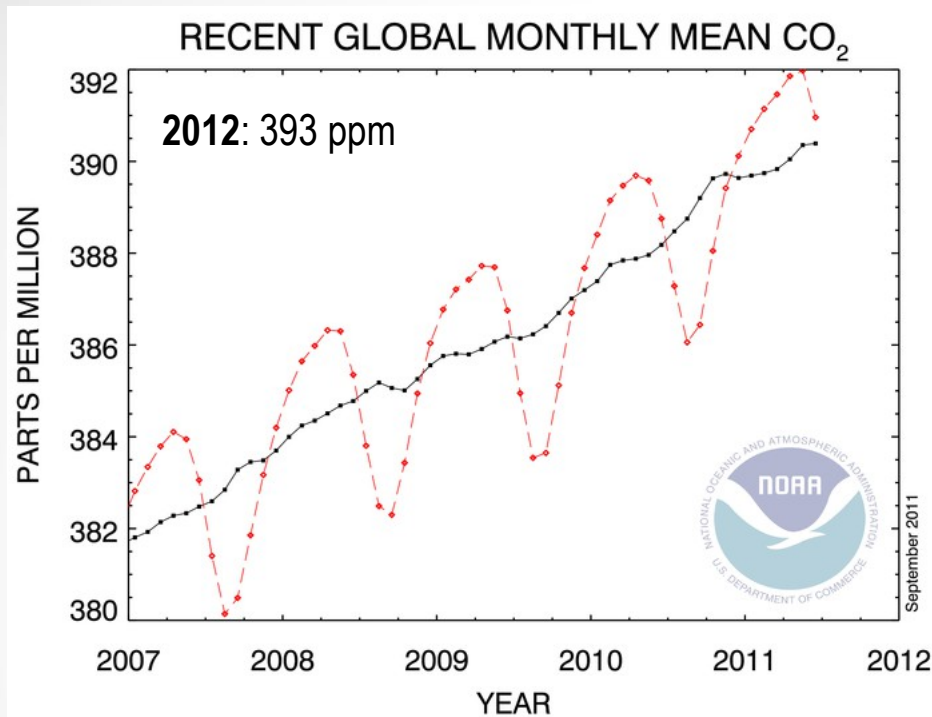
1880 285 ppm (Est.)

1958 315 ppm

2012 393 ppm

Increase of 108 ppm in 132
years = .82 ppm/yr.

Atmospheric CO₂ Concentration



Annual Mean Growth Rate (ppm y⁻¹)

2010 2.37 (3x)

2009 1.63

2008 1.81

2007 2.11

2006 1.83

2005 2.39

2004 1.58

2003 2.20

2002 2.40

Annual Growth Rates
(decadal means)

1970 – 1979: 1.3 ppm y⁻¹

1980 – 1989: 1.6 ppm y⁻¹

1990 – 1999: 1.5 ppm y⁻¹

2000 – 2010: 1.9 ppm y⁻¹

News, May 12, 2013

- 400 PPM
Carbon
Dioxide!
- Mauna Loa,
Hawaii
- Which is the
highest it has
been in the
last
- two million
years!

What is the net quantity of carbon dioxide that is being added each day to the atmosphere, globally?

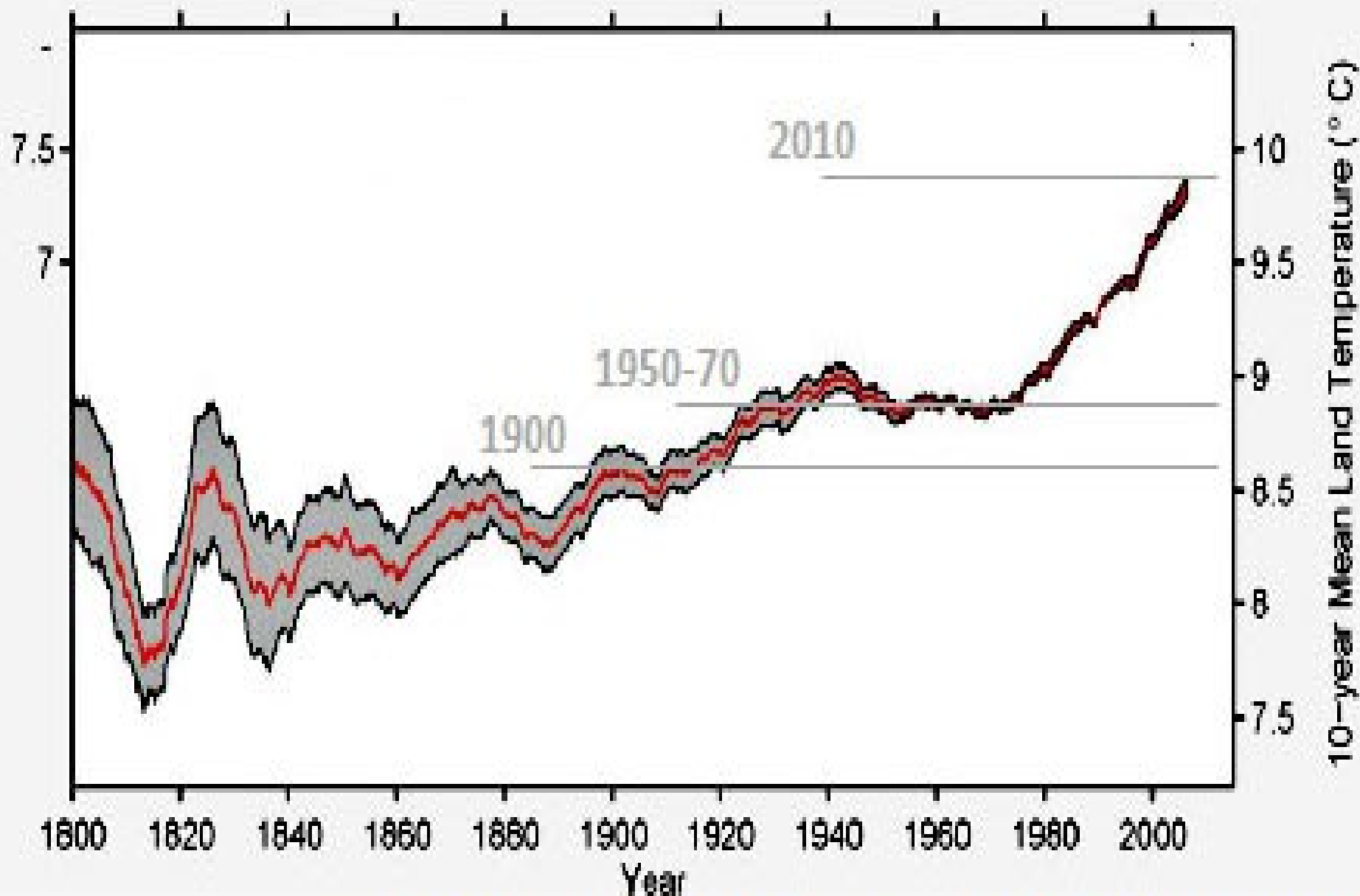
Estimates vary from
100,000,000 to more than
1,000,000,000 tons per day!



GLOBAL WARMING

**Climbing temperatures.
Melting glaciers. Rising seas.
All over the planet we're feeling
the heat. Happy Earth Day!**

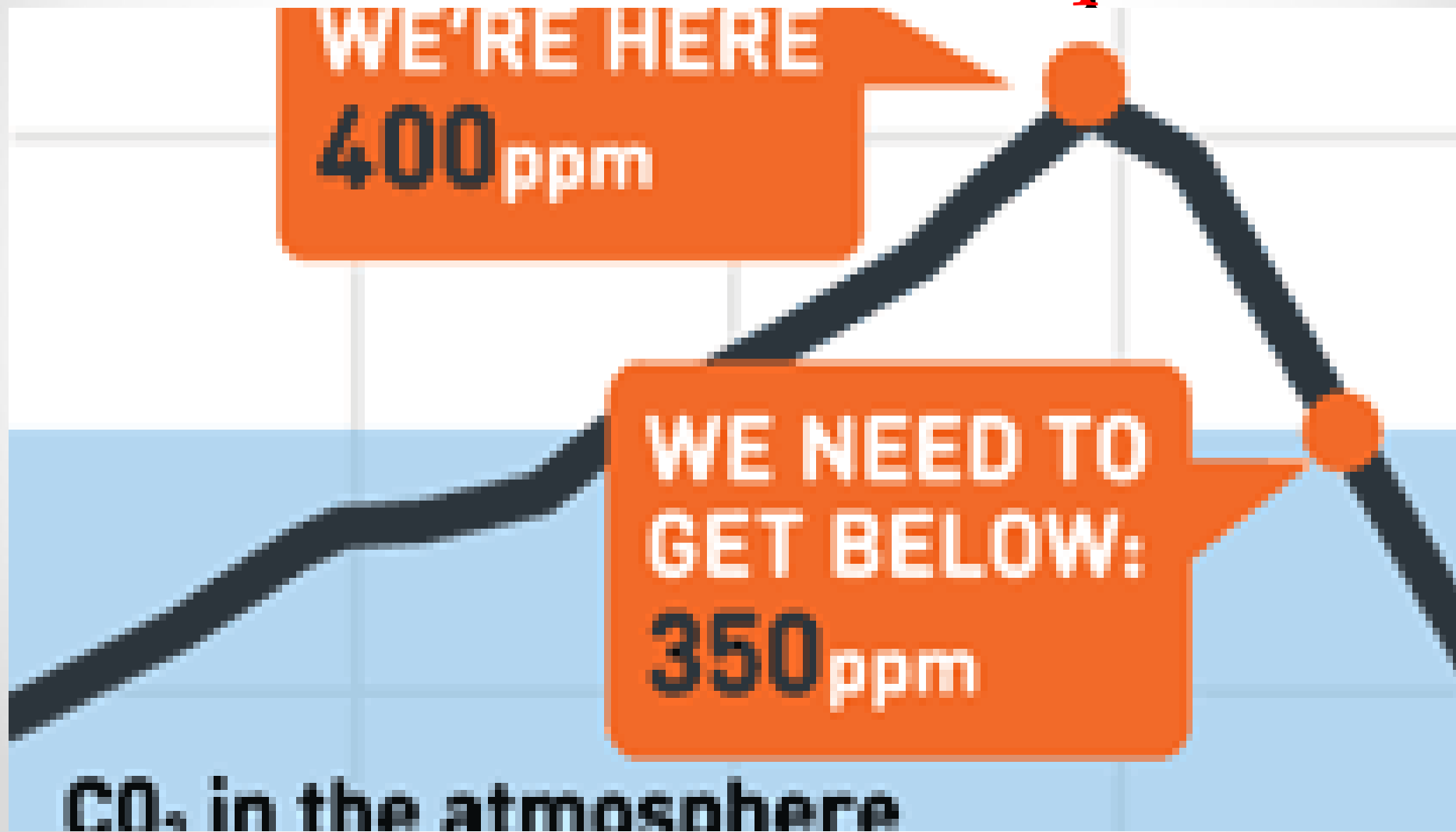
Increasing Average Temperatures



This is what global warming sounds like when converted to music

- 130 years of global temperature data, converted to music, io9

285, 400, 350 PPM Carbon Dioxide in the Atmosphere



350.org

- International effort to raise awareness of the need to decrease carbon dioxide concentration in the atmosphere to 350 parts per million.
- <https://www.youtube.com/user/350org>

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The Earth is Shrinking!!!

- The Human Population continues to increase:
 - 70,000,000+ per year!
 - **That means that 35X the population of Slovenia is being added to the earth each year!**
 - From, "The Earth is Shrinking: Advancing deserts and Rising Seas Squeezing Civilization,"
by Lester Brown
<http://www.earthpolicy.org/updates/2006/update61.htm>

The Earth is Shrinking!!!

- **Desserts are spreading;**
 - **China is losing productive land to deserts at an accelerating rate**
 - **1950 – 1975 they lost 1,560 sq km/yr.**
 - **By 2000 they lost 2,480 sq km/yr**
 - **In recent years Afghanistan lost 100 villages and Iran lost 124 villages due to advancing desserts;**

Half of the world's
forests have been
destroyed by human
activity.

Annually, 9 million
hectares of forests are
being cut; this is an
area equal to the size of
Portugal

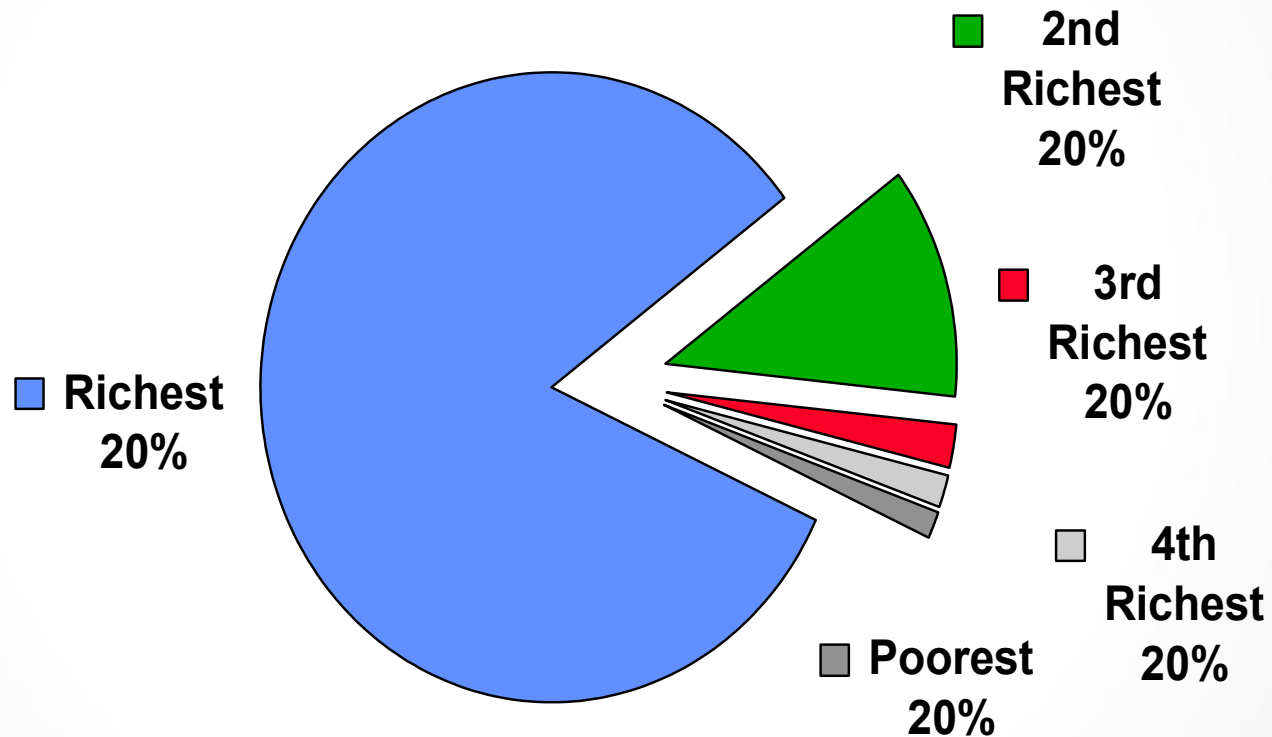
**We are now in a period of
mass species extinction.**

**104 species become extinct
every day.**

**We must find solutions for
these problems?**

Global Income and Economic Disparities

In Distribution of World Income



Source: Agenda for Change, Center for our Common Future. 1989 figures from UNDP

**Over 1.5 billion (25%)
of the world's
population is
impoverished and
malnourished.**



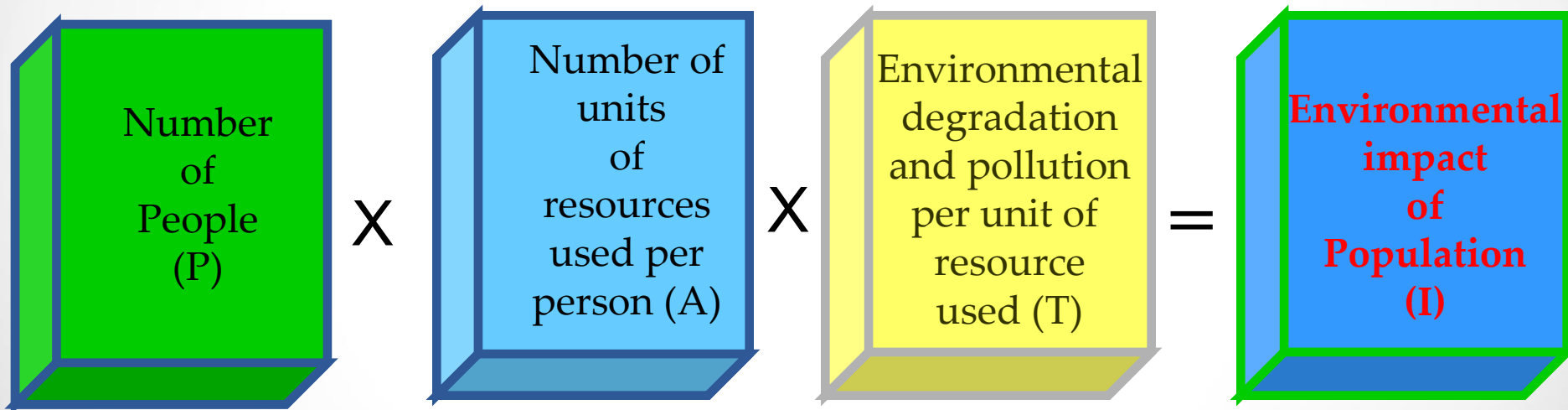


Decline of the Middle Class

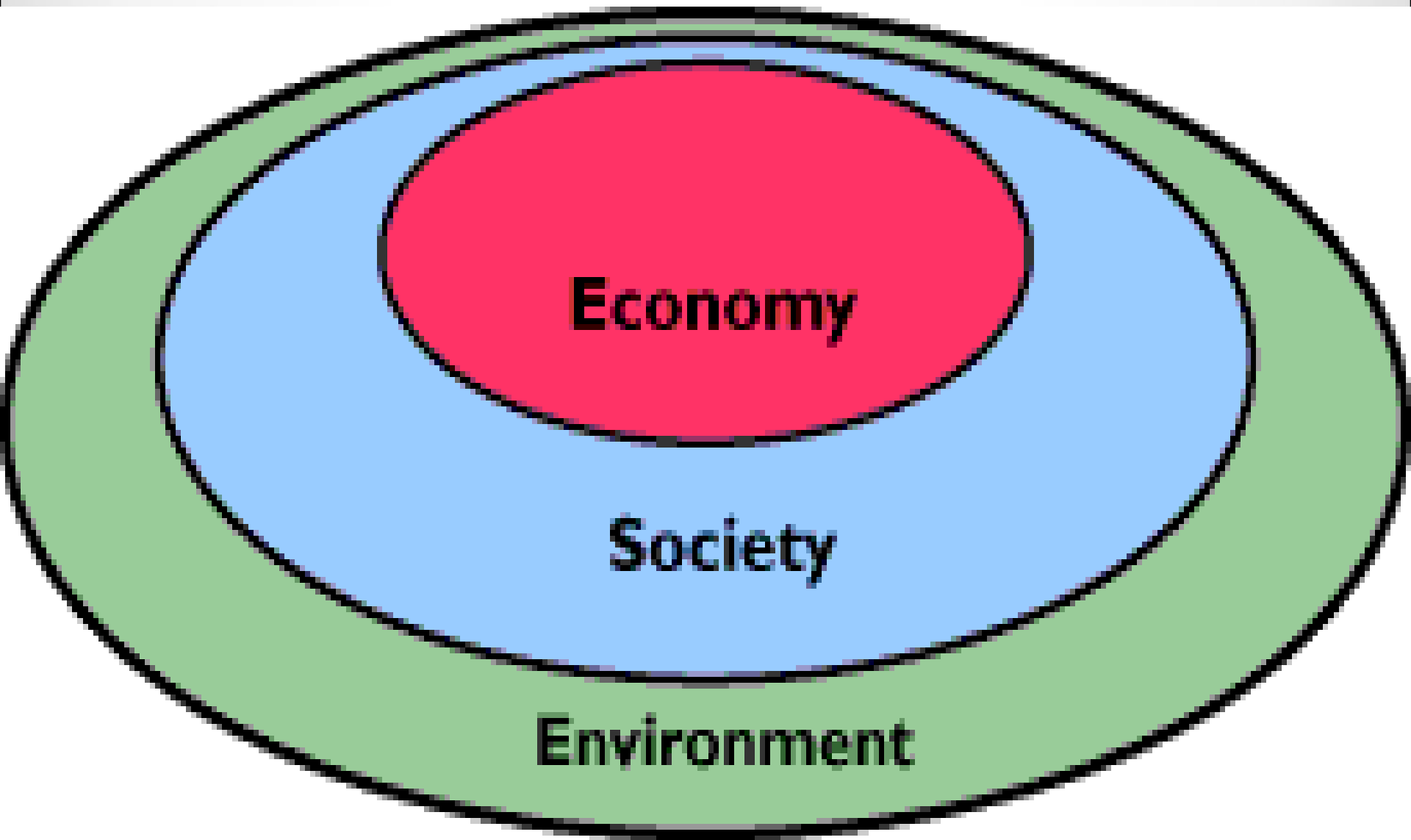
- Between 1945 and 1973, productivity of American workers grew **96%** and they **received a 94% increase in wages**
- Between 1973 and 2011, the middle class has decline. While American workers' productivity grew by **80%**, and they only **received a 10% increase in wages.**



Interconnectedness of Population, Affluence & Technology

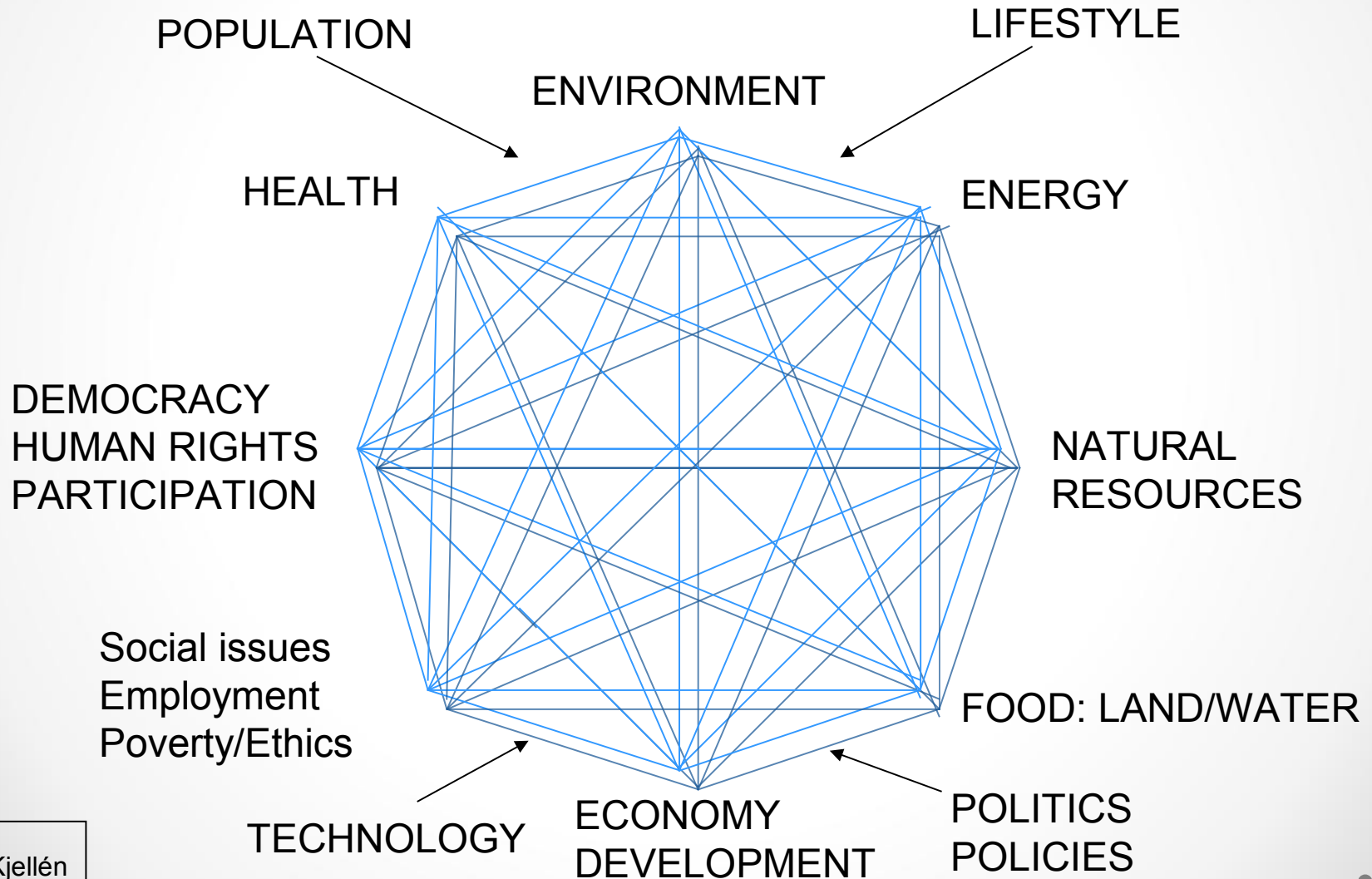


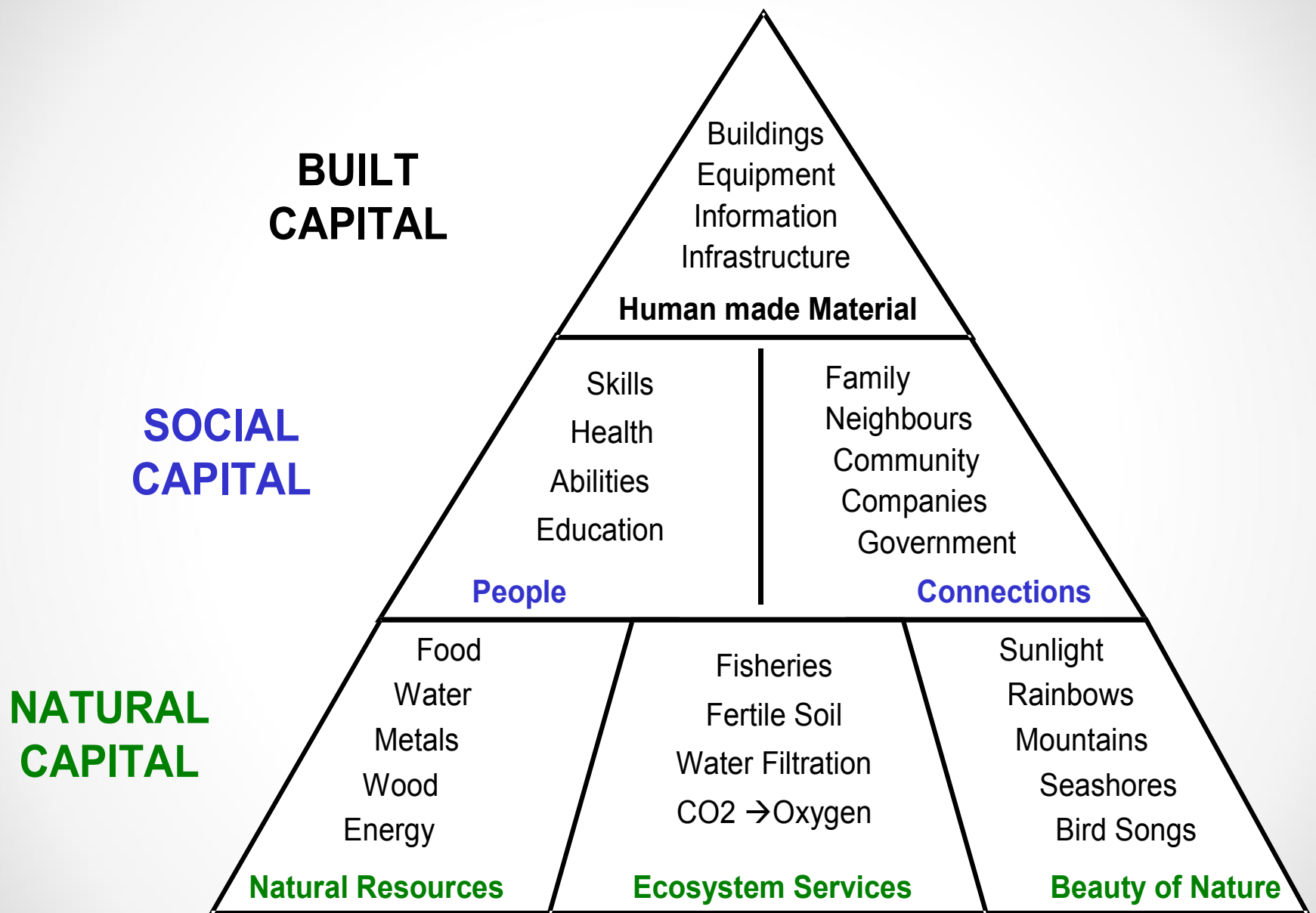
Sustainable Development?



Sustainable Development?

Diamond of Sustainability





Trans Generational Perspectives



Changes are
happening all
over the world!

Some of the Preventive Environmental Protection Inputs

- **Agenda 21;**
- **The Earth Charter;**
- **Millennium Development Goals**
- **The Precautionary Principle;**
- **The Natural Step Principles;**
- **The Melbourne Principles;**
- **Pollution Prevention Pays**
- **Cleaner Production/Leaner Production/Greener Production**
- **Sustainable Consumption and Production**
- **The Decade of Education for Sustainable Development (EfSD) 2005 – 2014;**
- **The Equator Principles for Sustainable Finance.**

Bhutan – Gross National Happiness

- “The gross national product (or Gross Domestic Product)...measures everything, in short, except that which makes life worthwhile.” -- JFK
- Instead of focusing on throughput measured by GNP or GDP, Bhutan measures and seeks to optimize Gross National Happiness, (GNH).



“

Gross National Happiness

is more important than Gross

National Product.”

By: HM. Jigme Singye Wangchuk.

Bhutan's Four Pillars of Gross National Happiness

- 1. Good Governance**
- 2. Balanced Economic Development**
- 3. Environmental Preservation**
- 4. Preserve and Promote Culture**

Alternatives to Gross National Product (GNP) or Gross Domestic Product (GDP)

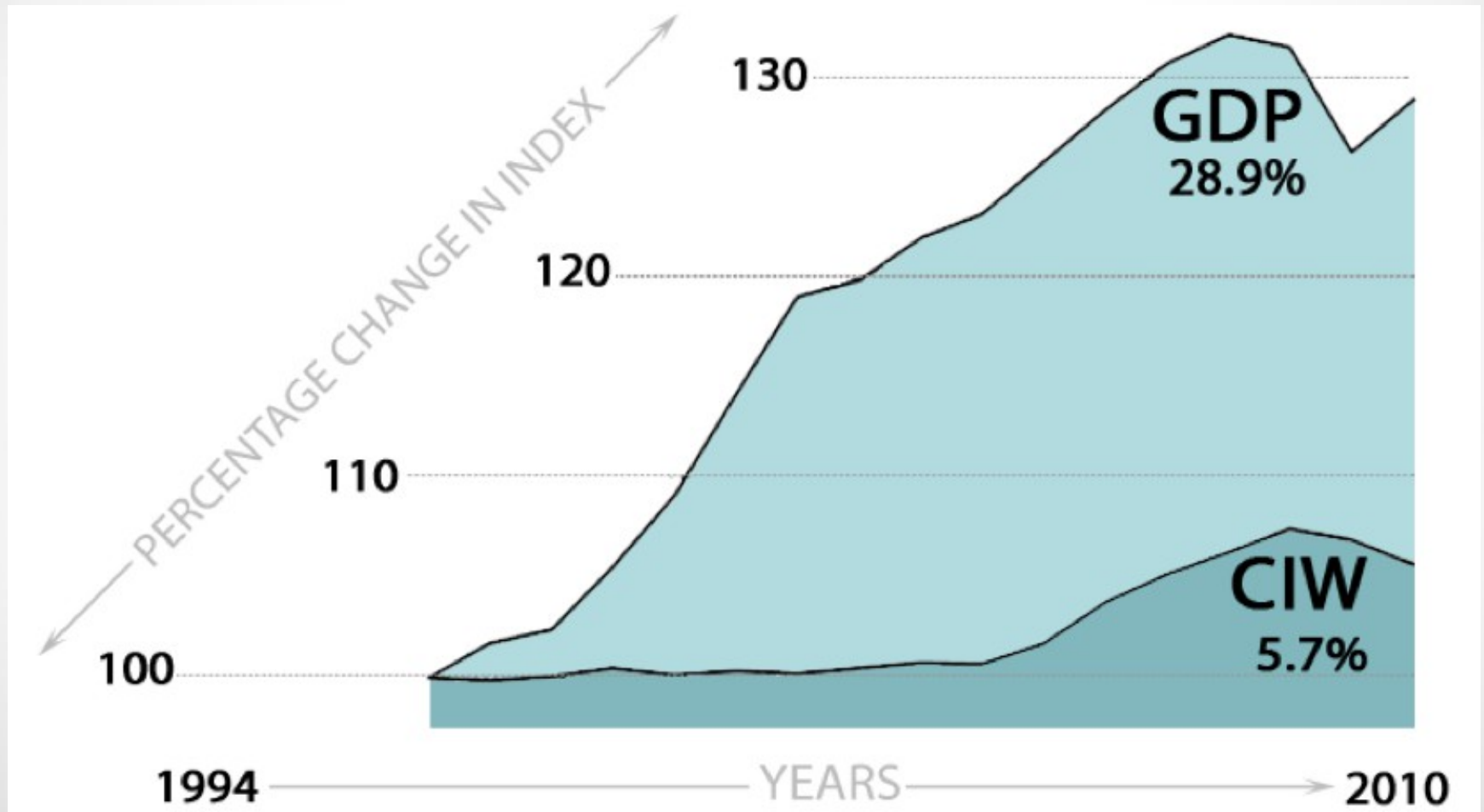
- The Happiness Index (HI);
- The Quality of Life Index (QoLI);
- The Wellness Index (WI);
- The Inclusive Wealth Index (IWI);
- World Happiness Index (WHI);
- The Happy Planet Index;
- The Gallup World Poll (QWP);
- The World Values Survey (WVS)
- The European Social Survey (ESS)
- The OECD Better Life Index
- The UNDP's Human Development Index (HDI);
- The True Sustainability Index;
- Country Futures Indicators;
- Human Development Index (HDI);
- The Calvert-Henderson Quality of Life Indictors;
- The Canadian Index of Well-Being.
- The UN's Quality of Life Index

Canadian Index for Well-Being

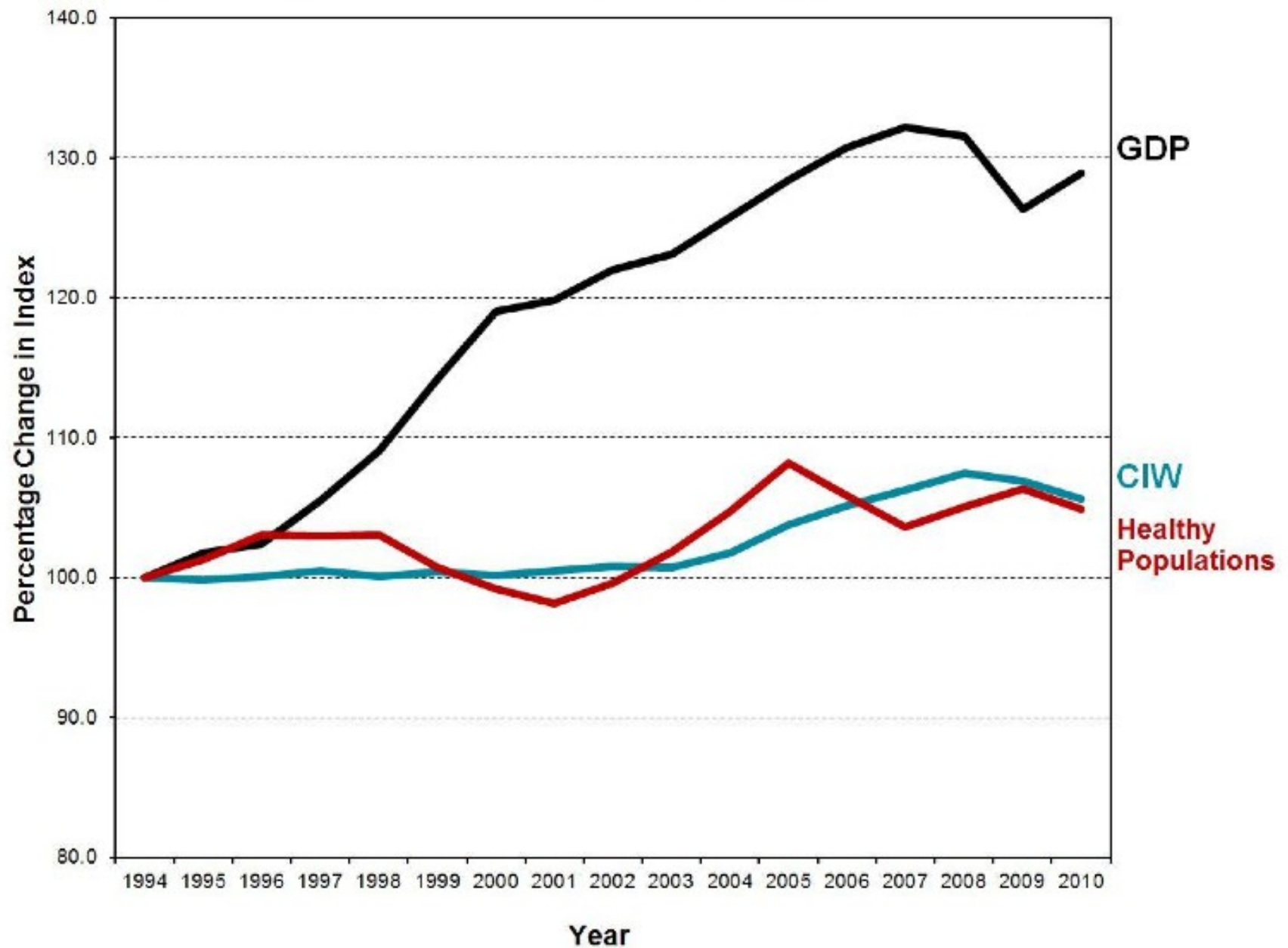
- Using a range of indicators measure Canadians' overall well-being
- The CIW uses 64 indicators
- Studies have been done using the CIW in Victoria, Fort McMurray, Kingston area, Guelph, and Waterloo region



CIW vs. GDP – Last Recession



Trends in *Healthy Populations*, CIW, and GDP (per capita) from 1994 to 2010



**The Chinese Government
is supporting its citizen's
involvement in SD with
the theme: "Cherish the
Earth's Resources: Change
the Developmental Model"**

Support for use of True Wealth Measures

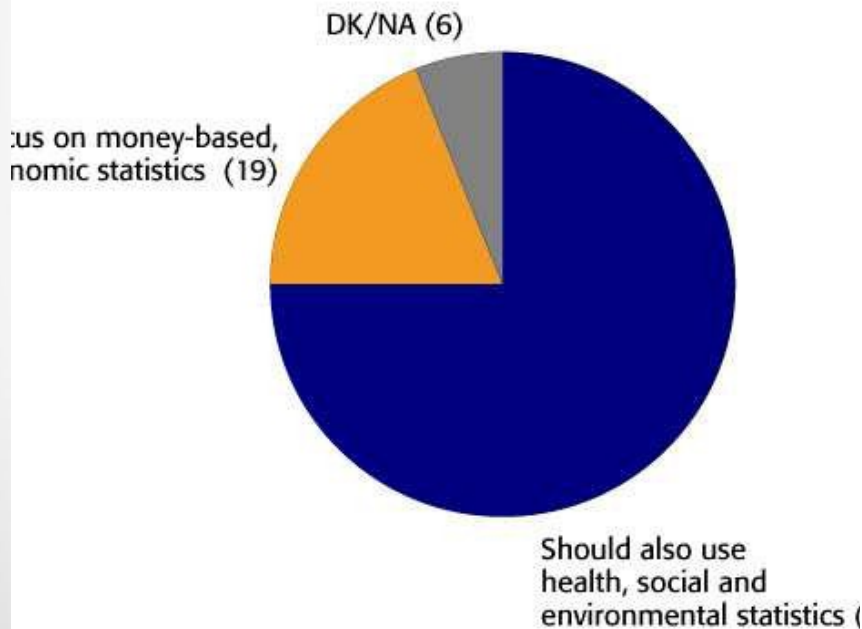
- Approximately, 1,000 respondents in each of the ten countries were asked which of two points of view was closest to their own:
 1. That governments should measure national progress using money-based statistics because economic growth is the most important focus for the country;
 2. That health, social and environmental statistics are as important as economic ones and that governments should also use these for measuring national progress.

- Mr. Chris Coulter, Vice-President
- GlobeScan Incorporated
- London, UK
- +44 20 7253 1441
- chris.coulter@GlobeScan.com

Worldwide Support for True Wealth Measures:

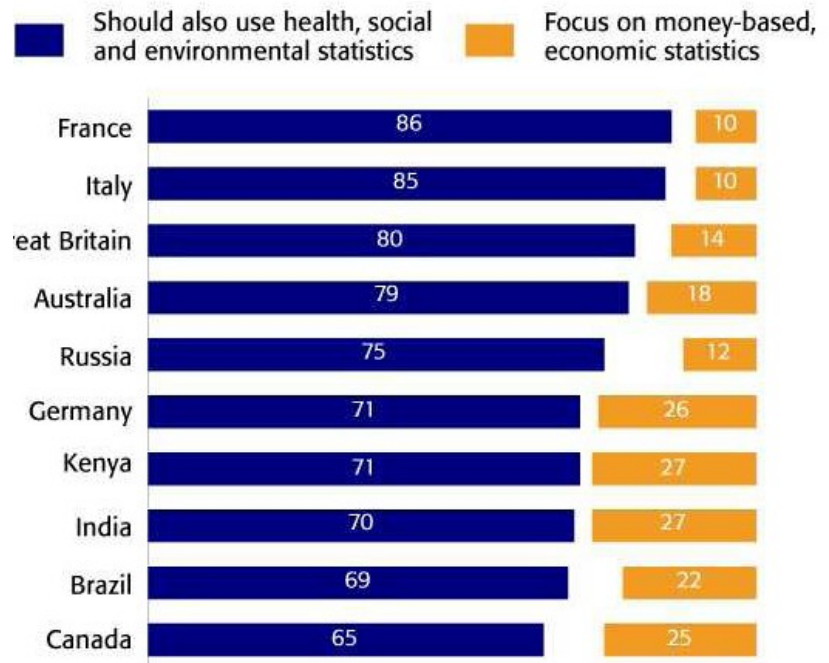
Best Approach to Measure National Progress and Development

10 Country Average, 2007

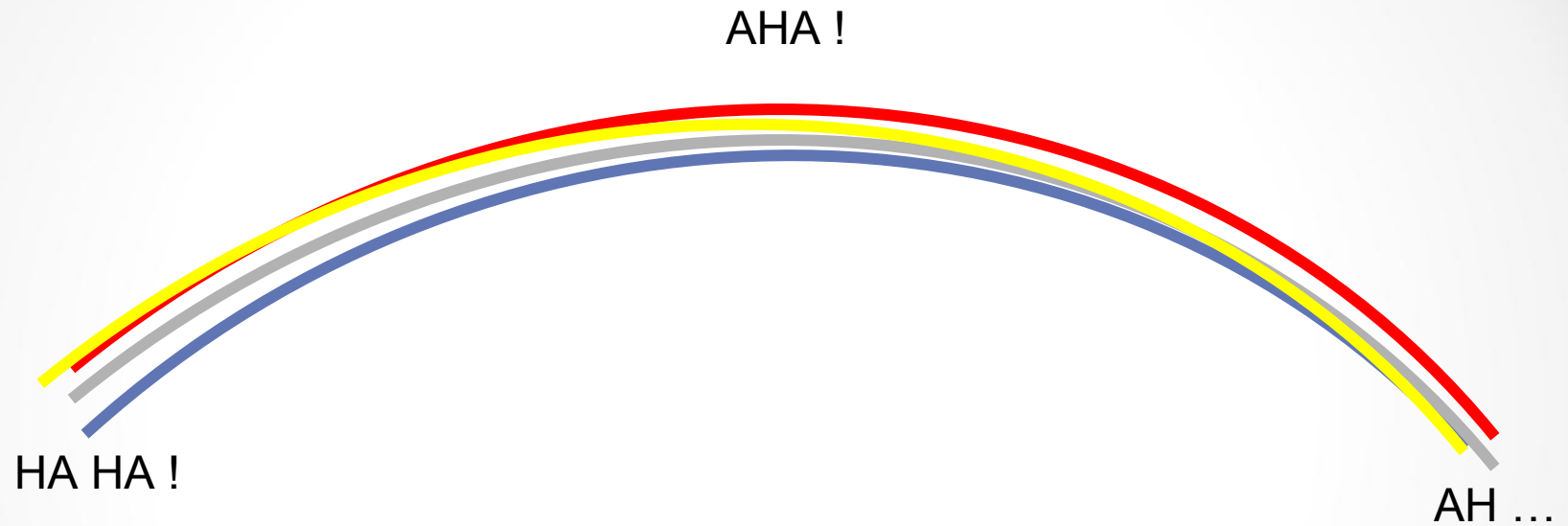


Progress and Development

By Country, 2007



The white space in this chart represents "DK/NA."



“haha-aha-ah” curve

-after Arthur Koestler

Bottom Up Solutions

Given the trends around productivity and the lack of employee remuneration, numerous models are being used to create more equitable & sustainable communities

- 1.Place-based companies
- 2.Worker ownership
- 3.Social enterprises
- 4.Traditional Co-ops
- 5.B-Corporations
- 6.Community Development Corporations
- 7.Land Trusts

Place-Based Enterprise

- Paul Shrivastava and James J. Kennelly are critical of “the **“placeless” character of enterprise sustainability research**”



Characteristics

- Local ownership/control. Patient capital for long-term
- Production activities are interdependent with a place
- A strong and holistic understanding that place is more than location, locality, or landscape, but is also socially created in a nexus of meaning



Worker Ownership

- Employees own the organizations
- 11,000 companies employing 10 million people in Canada
- Hy-Vee, a large supermarket chain with almost 70,000 employees and \$8B in sales ranks 48th on Forbes list of the largest U.S. private companies:



Co-operatives

- Co-ops are owned and run by those using its services or by those working at the organization;
- Some 130 million people or over 40% of Americans belong to one or more co-operatives.



B Corporations

- Most companies pursue short-term profit and externalize negative costs
- **Benefit Corp** is to business what Fair Trade certification is to coffee

Certified



Corporation™

B Corp – 3 Step Process

1. **Assessment:** meet standards for social and environmental performance, accountability, and transparency
2. **Governance requirements:** Expand serve stakeholder interests
3. **Declaration of Interdependence**



Sample B Corporations

- Warby Parker: for every pair of eye glasses sold, a pair is given to someone in need
- Revolution Food: 1 million meals for low income public school students each week



Land Trusts

- By removing land from the speculative market and “democratizing ownership,” trusts can stop gentrification and support low income housing with development profits.
- By 2012 it was estimated that 255 land trusts were operating in 45 states



Changing Directions

- Ontario 1st province in North America to phase out coal-based electricity generation
- Had been home to NA's largest coal mine
- **“While the politicians could ignore the environmentalists when they said that smog kills, they couldn't ignore Ontario's doctors.”**



Reinvestment

- Norway's Sovereign Wealth Fund - was set up to invest part of the country's oil revenue to save for future generations
- It is the "largest state investor in the world"
- Under pressure to divest from fossil fuels and invest in green projects
- **In June 2014, they decided to double their environmentally related investments to about \$8 billion**



Fossil Fuel Divestment

- Largest academic sector divestment: **Stanford University** promised in May 2014 that its \$18+ billion endowment no longer invests in coal
- Rockefeller and 180 other organizations have agreed as of Sept. 2014 to **divest \$200 billion from coal, tar sands and oil and invest in renewables**;
- Numerous religious groups are **similarly divesting from fossil and investing in renewables**
- **Some believe we are at the tipping point!**



Crowdfunded, Creative Solutions

- Crowdfunding websites, like Indiegogo and Kickstarter, are enabling people to share great ideas and to obtain funding from people they have never met
- In five years over 7 million people pledged \$1 billion, for funding 71,000 creative projects using Kickstarter

The logo for Kickstarter, featuring the word "KICKSTARTER" in a bold, sans-serif font. The "KICK" is in black and the "STARTER" is in a vibrant green color.

KICKSTARTER

Solar Roadways

- A couple in Northern Idaho have a vision to create Solar Roadways
- The idea is to create 'intelligent' roads made of solar panels that generate power, melt snow and warn drivers of potential accidents, etc.
- The goal was to raise \$1M – they raised \$2M+!!!



Crowdfunded, Creative Transit

- Toronto is struggling with incredible challenges to overcome gridlock and provide effective transportation
- Two citizens in a fast-growing neighbourhood, frustrated by poor service have crowdfunded a private bus
- Funders get a guaranteed bus can vote on the bus' routes



Slow Fashion

- A new '*slow fashion*' movement has begun
- “a return to the past as evidenced by models of supply based on proximity of manufacturing and the valorisation of craftsmanship”



The New Consumer

- “The image of the neo-consumer, increasingly attentive to the environmental and social impact of products, continues to spread.
- *Lifestyles of Health and Sustainability* (LOHS)



Integrating Ethics & Aesthetics

- “The responsible company’s integration of ethics and aesthetics needs to be continually reaffirmed all along the value chain”
- “The principal opportunities include work on **product traceability**, and on providing the end-consumer with an **emotional narrative** in response to the increasing desire for guarantees and information about a given product’s history.



“The Responsible Fashion Company”

- “in order to continue being competitive, companies must adopt a new managerial and entrepreneurial model that involves a medium to long-term perspective and takes into account all the parties involved
- from the environment to society, culture, the media, institutions and legislation—placing values and ethics at the centre.”



“Changing the Food Game: Market Transformation Strategies for Sustainable Agriculture”

- Sustainability of global agricultural commodities is at a critical tipping point.
- Collective systematic action that realizes breakthrough impacts with farmers and supply chains is needed.
- This book maps the transformation and offers a path forwards.
- By Lucas Simons
- (Greenleaf Publisher)

Practical Wisdom in Management Business Across Spiritual Traditions

- "Ted Malloch shows how, through the lenses of the world's spiritual traditions, businesses can acquire a clearer picture of the world in which they operate, resulting in more sustainable corporate practices both financially and ethically.

This is practical wisdom in action!"

- By Prof Dr. Claus Dierksmeier,
- Humanistic Management Center, Global Ethic Institute
- Greenleaf Publishing: October 2014 400 pp paperback
ISBN 978-1-78353-131-8

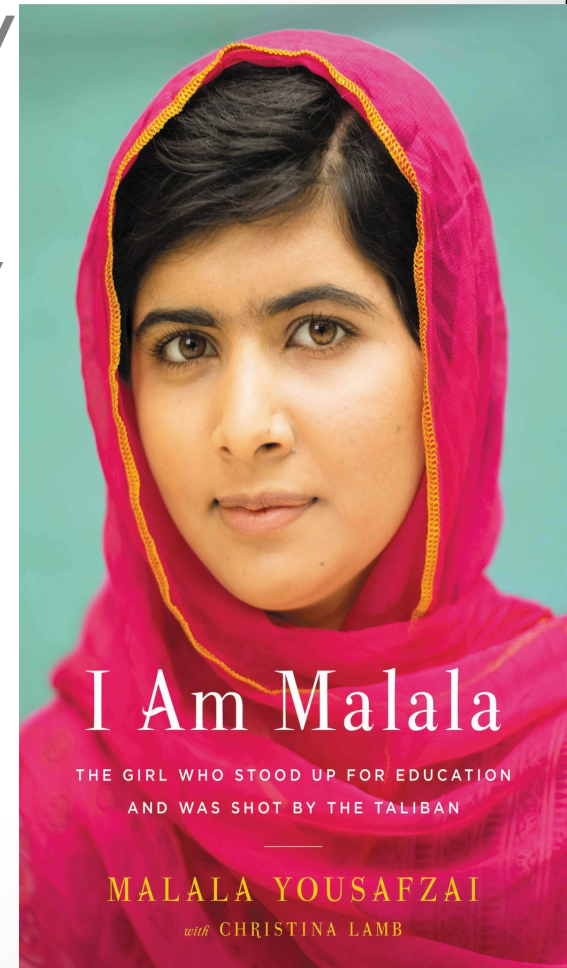
Mass Participation & Mobilization

- We were only able to reach small numbers with paper petitions, traditional mail and by phone
- The internet and websites like Avaaz and Change.org have completely changed things
- Avaaz helped mobilize 400,000+ people to march in New York and cities around the world to push for climate action during Sept. 2014.



Nobel Prize for Malala

- Malala Yousafzai was shot in the head by the Taliban
- A Canadian journalist started a massive wave of support demanding that country leaders nominate her for the Nobel Peace Prize
- Half a million people from over 100 countries joined in - over 125 world leaders nominated Malala
- She won the Nobel Peace Prize!





The Transition Network

a. The Transition Handbook: From Oil Dependence to Local Resilience,

b. The Transition Companion: Making Your Community More Resilient in Uncertain Times,

c. The Power of Just Doing Stuff: How Local Action Can Change the World

[http://www.transitionnetwork.org/
about](http://www.transitionnetwork.org/about) (Founded by Rob Hopkins.)

**national governments to help them to
become catalysts and role models for
change?**

- **Learn how the system really works;**
- **Understand how to work with the system by effectively using leverage points;**
- **Be a role model for the changes you hope to see evolve in society.**

Be a catalyst and role model for change

- **Move increasingly from "site thinking" to "regional thinking";**
- **Move from production thinking to sustainable consumption & production thinking;**
- **Foster integration of ethical and social factors into sustainable city and regional planning;**

Be a catalyst and role model for change

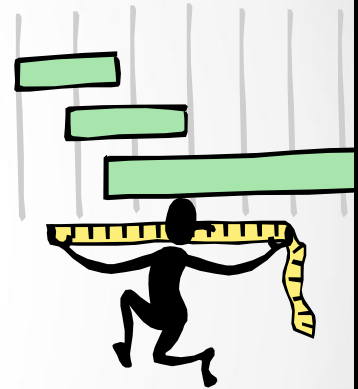
- **Foster the development of Sustainable eco-communities based upon bio-regionalism;**
- **Participate in international networks on sustainable city & regional development.**

Be a catalyst and role model for change

- **Develop and enforce regulations designed to achieve *sustainable societies*;**
- **Develop ecological, economic and ethical *sustainability performance indicators*;**

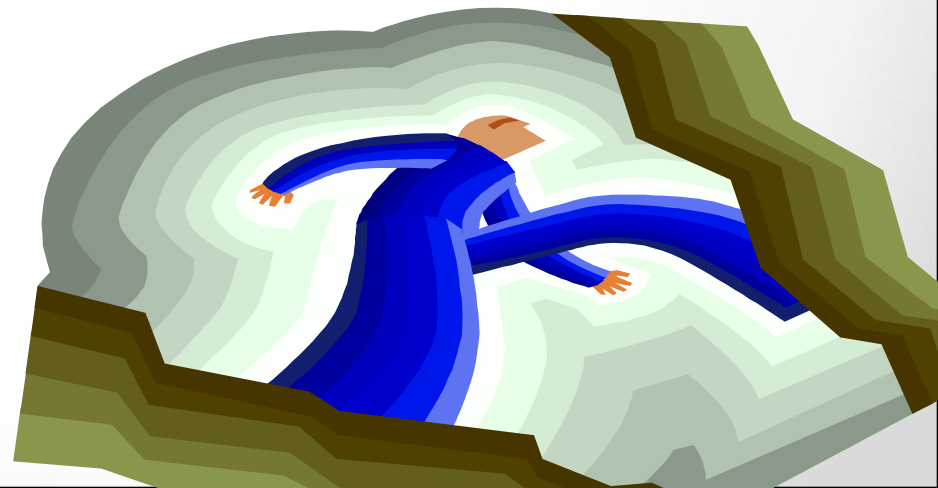
Be a catalyst and role model for change

- Use sustainability performance indicators to monitor progress toward sustainable societies;
- Report on the progress or lack of progress and correct policies, procedures and processes as needed

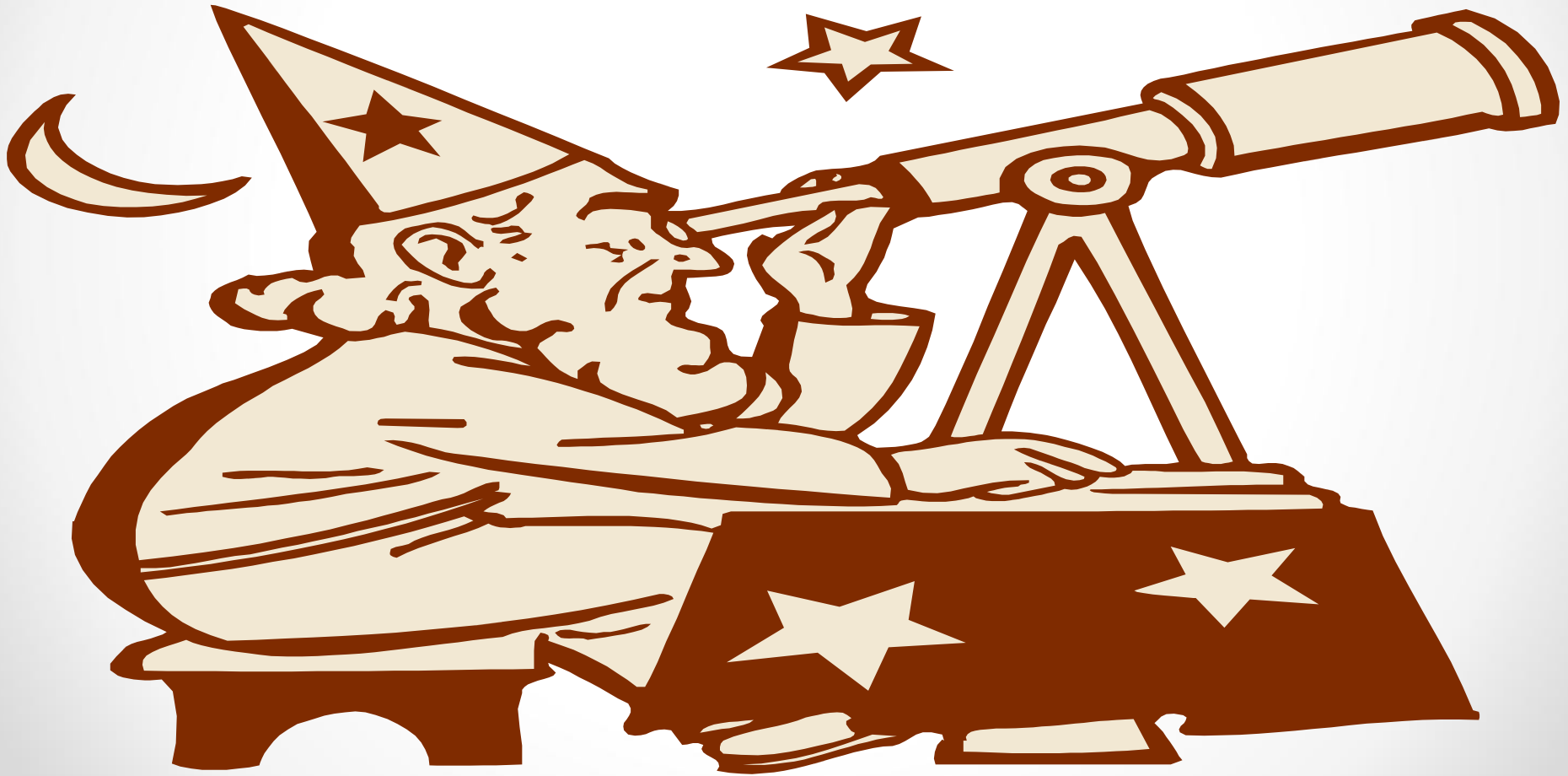


In Conclusion

- We have the responsibility to ensure that our courses, research, outreach and campus operational procedures address present and future challenges to help societies make the transition to equitable and sustainable post fossil carbon societies.



How should we move forward?



Make the Box Bigger!



**Expand it to include
the entire campus and
community**

And Bigger!



**Expand to include the city
or region**

Even bigger!



Expand to include the entire nation

Finally!



• Expand to include the planet! •







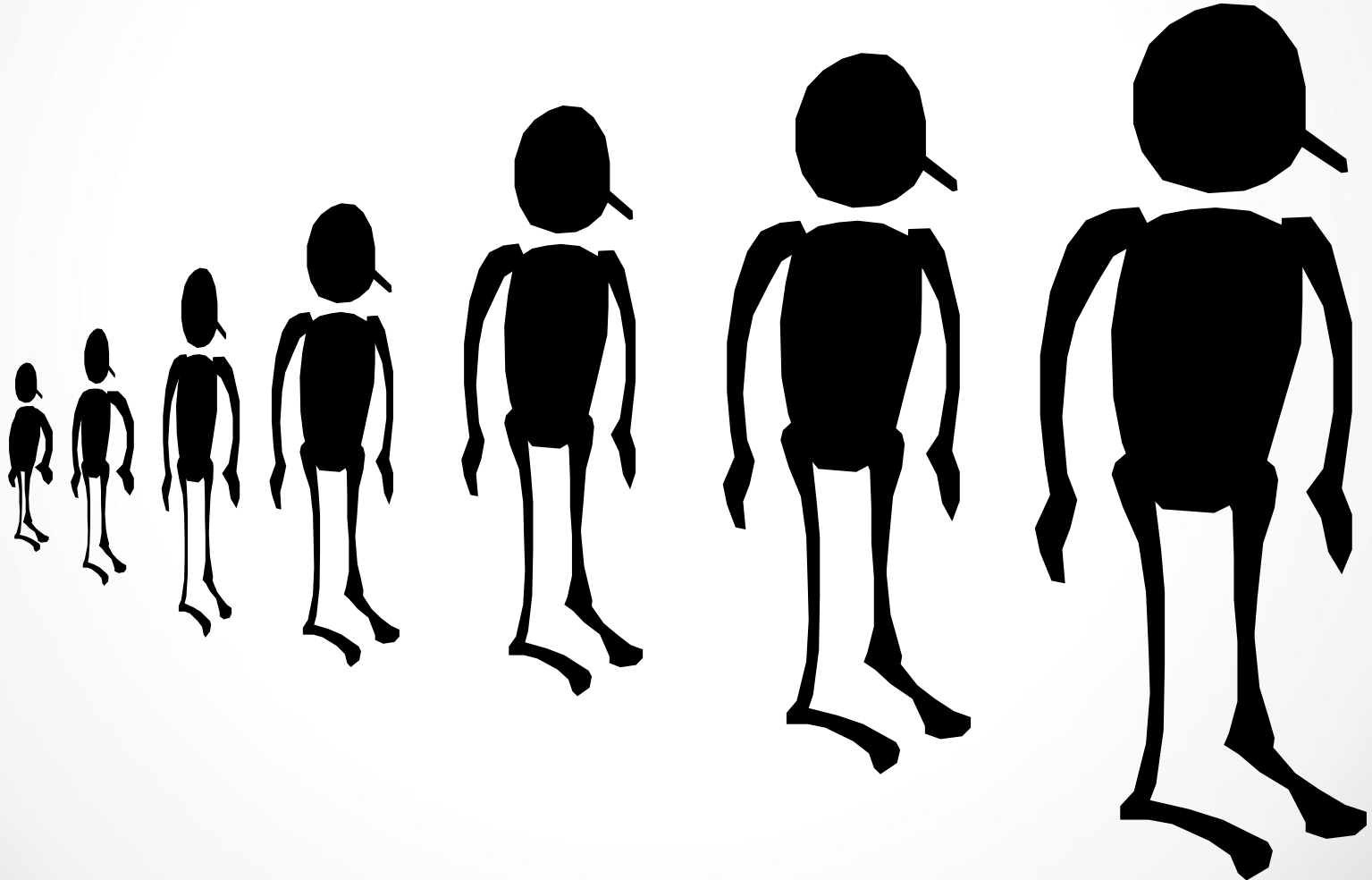








Who should be empowered to make decisions on international and global welfare issues?



**IT'S AMAZING WHAT PEOPLE CAN ACCOMPLISH
WHEN THEY WORK TOGETHER.**





Dec. 4, 1992
Jemma R. M. Jones
"Thinking"





