



# **Putting people and the planet first: The new imperative for the 21<sup>st</sup> Century**

**Moncton NB, 28 September 2016**

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# Outline

1. The Anthropocene
2. The ecological determinants of health
3. Key ecological changes underway
4. Human driving forces
5. Health and human development impacts
6. Imagination and hope
7. The public agenda
  - a) Focus on what matters
  - b) New measures of progress
  - c) A new system of economics
  - d) New approaches to governance
  - e) Interesting new legislation



# My main point

- **By putting the economy first, we have improved our material wellbeing and our health**

**BUT**

- **We have also compromised the health of the ecosystems that we ultimately rely upon for our health and survival**

**AND**

- **We have created great inequality, which threatens social stability.**



- **It is time to de-throne the economy as the centrepiece of our social and political life and our values.**
- **It is time to put people and the planet first**
- **That is the new imperative for the 21<sup>st</sup> Century**



# 1. The Anthropocene

- **Our efforts to subdue nature have been so successful that the time in which we now live has been called the Anthropocene - it will show up in the geologic record**
- **Welcome to the Anthropocene!**



# • Welcome to the Anthropocene •

VIDEO

<https://www.youtube.com/watch?v=fvgG-pxlobk>



A 3 minute video will be shown here – in English



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PLANET UNDER PRESSURE 2012 MARCH 26-29 LONDON

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Stockholm Resilience Centre Research for Governance of Social-Ecological Systems



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# Global change and public health

## CPHA Project

- **Document the potential health impacts of major global ecological changes**
  - Climate and atmospheric change
  - Pollution and ecotoxicity
  - Resource depletion
  - Loss of species and biodiversity
- **Identify the drivers of these changes**
- **Propose an action agenda for public health**



CANADIAN PUBLIC HEALTH ASSOCIATION  
DISCUSSION PAPER

**Global Change  
and Public Health:**

*Addressing the  
Ecological Determinants  
of Health*



May 2015

**Global Change and Public Health:  
Addressing the Ecological  
Determinants of Health**

**THE REPORT IN BRIEF**

**WORKING GROUP ON THE ECOLOGICAL  
DETERMINANTS OF HEALTH**

**APRIL 2015**

**Spady and Colin L. Soskolne**

**Available at**

<http://www.cpha.ca/uploads/policy/edh-brief.pdf>

[http://www.cpha.ca/uploads/policy/edh-discussion\\_e.pdf](http://www.cpha.ca/uploads/policy/edh-discussion_e.pdf)

<http://www.cpha.ca/uploads/policy/edh->



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**ROCKEFELLER  
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**THE LANCET**



## The Rockefeller Foundation–Lancet Commission on planetary health

### Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation–Lancet Commission on planetary health

*Sarah Whitmee, Andy Haines, Chris Beyrer, Frederick Boltz, Anthony G Capon, Braulio Ferreira de Souza Dias, Alex Ezeh, Howard Frumkin, Peng Gong, Peter Head, Richard Horton, Georgina M Mace, Robert Marten, Samuel S Myers, Sania Nishtar, Steven A Osofsky, Subhrendu K Pattanayak, Montira J Pongsiri, Cristina Romanelli, Agnes Soucat, Jeanette Vega, Derek Yach*

**It is time for a  
new discipline.**



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#PlanetaryHealth

## 2. The ecological determinants of health

- **We have become so fixated on the social determinants of health that we have neglected the ecological determinants of health**
  - **Population health has been ecologically blind**



# The ecological determinants of health

We depend on ecosystems for the very stuff of life:

- Air
- Water
- Food
- Fuel and materials
- Protection from UV radiation
- Waste recycling and detoxification and
- A relatively stable and livable climate.





# 3. Key ecological changes underway

# Its more than climate change!

**Global ecological change includes**

- **Climate and atmospheric change**
- **Resource depletion**
- **Pollution and ecotoxicity**
- **Loss of species and biodiversity**



# The state of the Earth's ecosystems

## Nine Earth System Processes:

(Steffen et al, 2015)

- **Climate Change**
- **Loss of Biodiversity**
- **Nitrogen & Phosphorus Cycle**
- **Ozone Depletion**
- **Ocean acidification**
- **Global freshwater use**
- **Changes in land use**
- **Novel entities\***
- **Atmospheric aerosol loading**

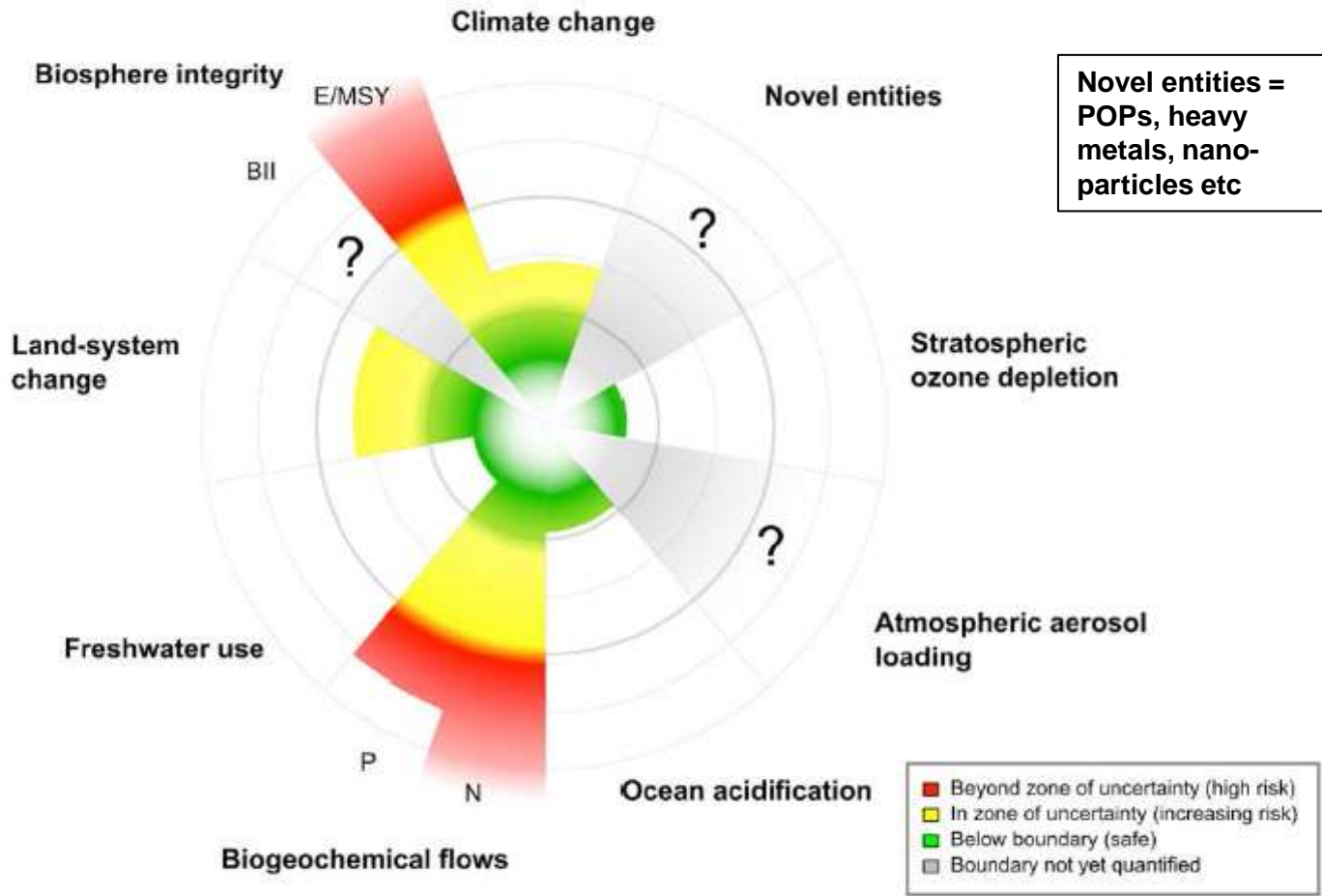
\* new substances, new forms of existing substances and modified life-forms that have the potential for unwanted geophysical and/or biological effects e.g. POPs, heavy metals, nano-particles, genetically engineered organisms





# Crossing Planetary Boundaries

- Genetic diversity = extinctions per million species-years (E/MSY)
- Functional diversity = Biodiversity Intactness Index (BII)



# The threat of 'state shift'

- The various global ecological changes interact, so the totality of their impacts is greater than the sum of their parts. (MAHB, 2013)
- State shift - rapid non-linear change.
- an emergent property of many complex adaptive systems e.g.
  - the 'Big Five' mass extinctions in geological history,
  - the loss of Arctic sea ice
  - methane release from permafrost

Barnosky et al, 2012

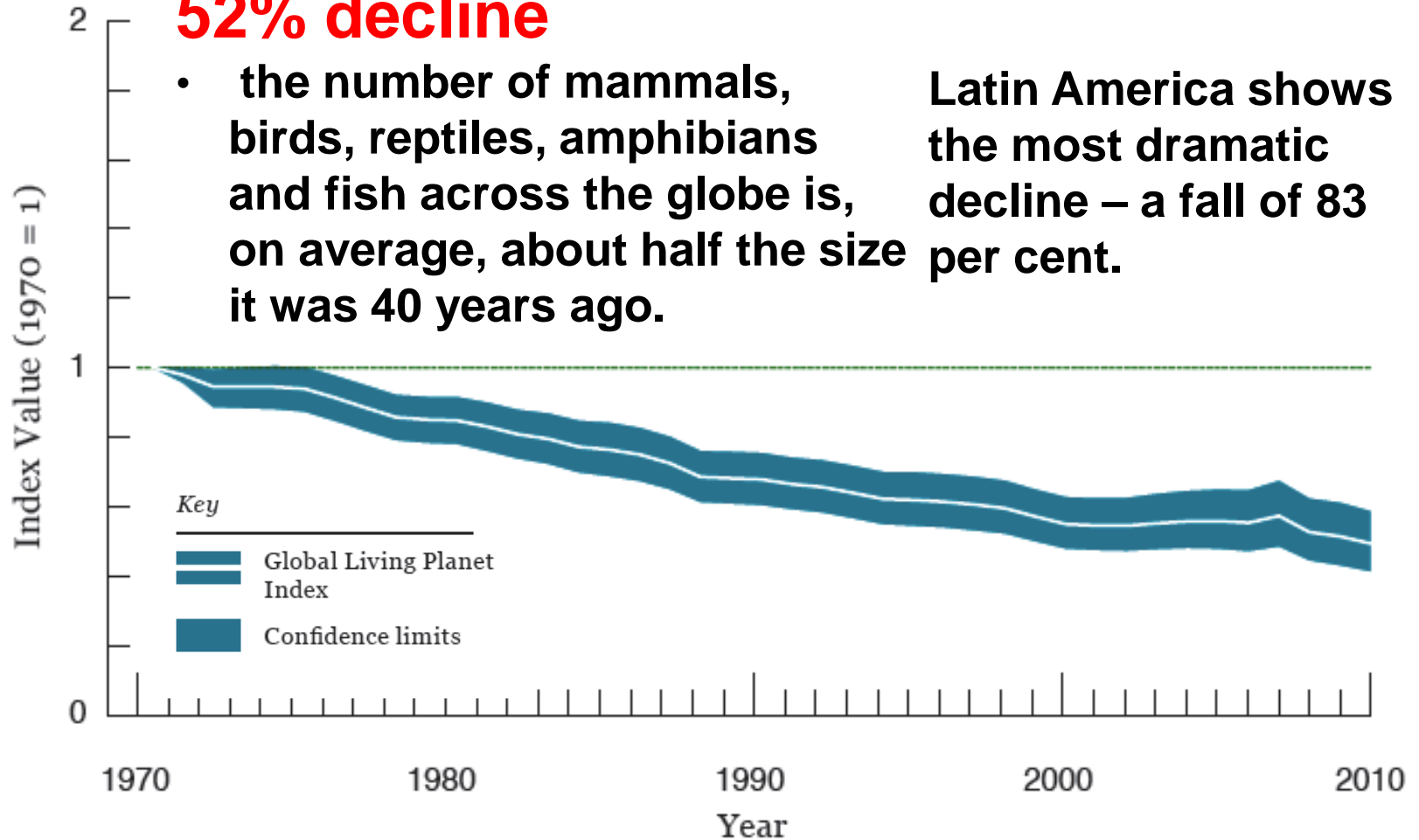


# Living Planet Index 1970 - 2010

## 52% decline

- the number of mammals, birds, reptiles, amphibians and fish across the globe is, on average, about half the size it was 40 years ago.

Latin America shows the most dramatic decline – a fall of 83 per cent.





# 4. Human Driving Forces

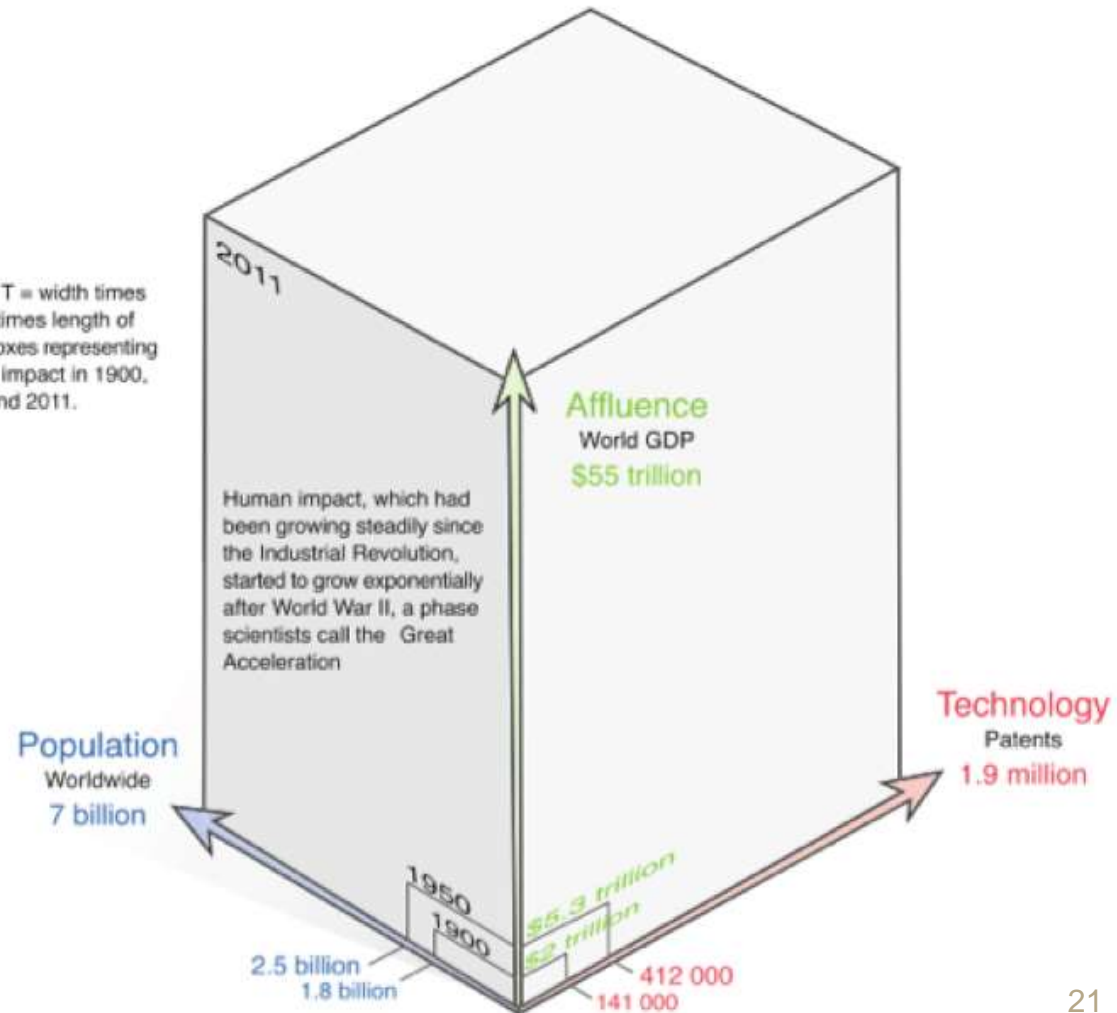
# The IPAT Equation: Impact = Population x Affluence x Technology

$$I = P \times A \times T$$

Human Impact = Population x Affluence x Technology

**Societal & human forces driving change, 1900 – 2011**

P x A x T = width times height times length of three boxes representing human impact in 1900, 1950 and 2011.



# Impact over an 80 year lifespan

- 1% annual growth in population  
= 2.2x
- 3% annual growth in real GDP  
= 10.6x
- **TOTAL OVER 80 YEARS = >23x**

**Even if our technology became 5 times more efficient, it is still >4x**



# THE GREAT ACCELERATION

## SOCIO-ECONOMIC TRENDS



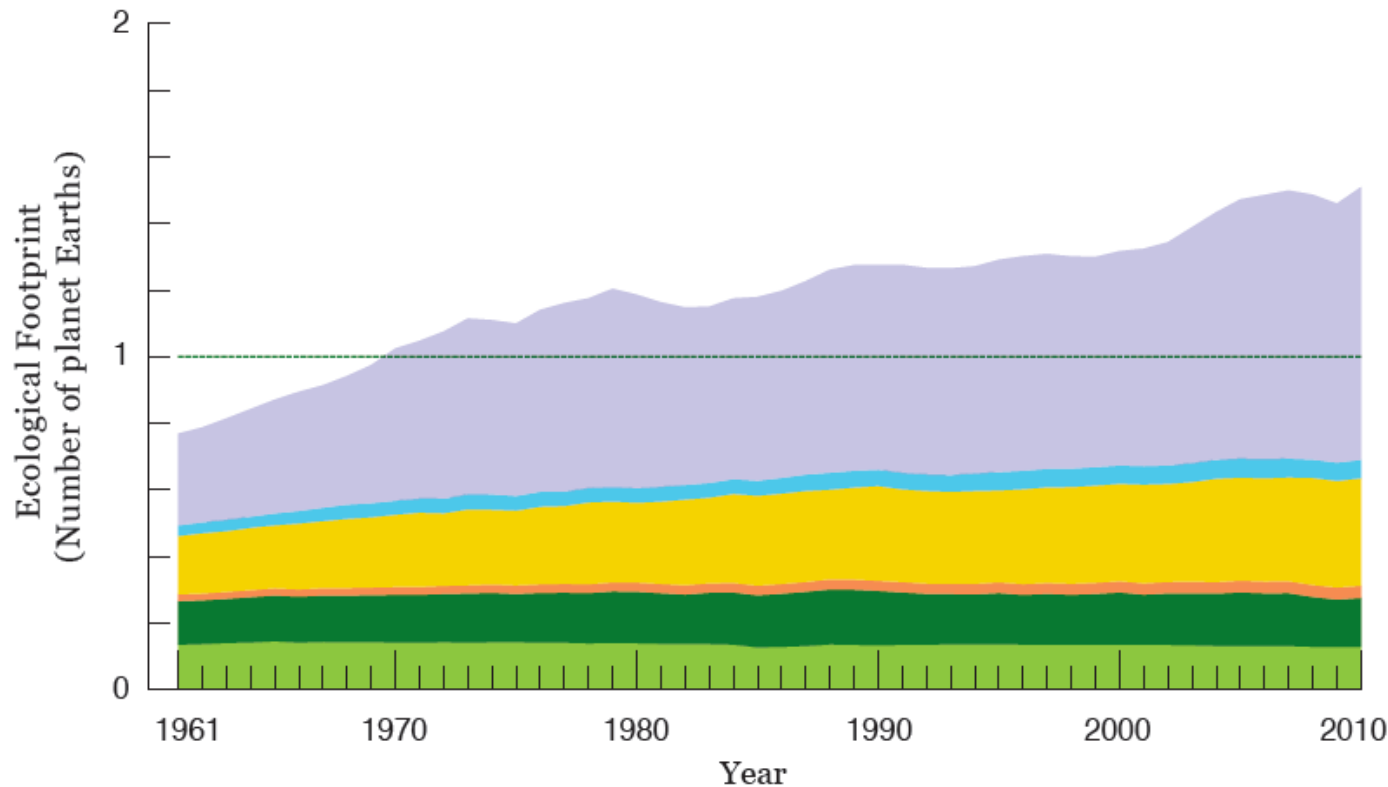
## EARTH SYSTEM TRENDS



REFERENCE: Steffen, W., Broadgate, L., Deutsch, O., Gaffney, C., Ludwig (2015), The Trajectory of the Anthropocene: the Great Acceleration, Submitted to The Anthropocene Review

MAP & DESIGN: Félix Pharand-Deschênes / Globaia

# Ecological footprint, 1961 - 2010



**Figure 3: The Ecological Footprint components:** the carbon component makes up more than half of the total global Ecological Footprint. (Global Footprint Network, 2014).

## Key

- Carbon
- Fishing grounds
- Cropland
- Built-up land
- Forest products
- Grazing products





# **It's the carbon, stupid!\***

- **Carbon from burning fossil fuels has been the dominant component of humanity's Ecological Footprint for more than half a century, and remains on an upward trend.**
- **In 1961, carbon was 36 per cent of our total Footprint; by 2010, it comprised 53 per cent.**

**WWF Living Planet Report 2014**

**\* Based on Bill Clinton's famous slogan – "It's the economy, stupid!"**



# There are Limits to Growth

**“Troublingly, the original forecasts produced by the MIT group, which predicted a substantial collapse of the global ecosystem and economy during the mid-21st century period, appear to be on track forty years after they were generated.” (Turner, 2008)**

\*\*\*\*\*

**The BAU scenario “aligns well with historical data that has been updated in this paper” (Turner, 2014)**





# 5. Health and Human Development Impacts

# A limited understanding

- **What we know about the health impacts of global ecological change is sketchy, preliminary, and often speculative**
- **But these changes often interact, multiplying adverse effects and affecting the whole system. Thus knowledge of the health impacts has to reflect comprehension of overall system change and its health impacts.**



# The Millennium Ecosystem Assessment, 2005

- “At the heart of this assessment is a stark warning. Human activity is putting such strain on the natural functions of Earth that **the ability of the planet’s ecosystems to sustain future generations can no longer be taken for granted.**”



# Mortgaging the health of future generations

**“we have been mortgaging the health of future generations to realise economic and development gains in the present. By unsustainably exploiting nature’s resources, human civilisation has flourished but now risks substantial health effects from the degradation of nature’s life support systems in the future.”**





# 6. Imagination and Hope

***“Hope is . . . the commitment to positivity in the face of adversity”***

***Dutt and Brcic, 2014***

# Messages of hope

- 1. The shift to a more ecologically sustainable society results in health gains from a healthier way of living.**
- 2. We have successfully helped to create major societal shifts in favour of health before.**
- 3. We are not alone; we have many potential partners.**





- 4. For the most part we know what needs to be done, indeed we have known for a very long time**
- 5. We have made some progress, there are in fact many examples of people, organisations, businesses, communities, cities, even entire nations, who are doing the right things and setting an example.**



# Health co-benefits

**All of the following have direct health co-benefits**

- **Energy efficiency**
  - Air quality up (beware IAQ issues!)
  - Physical activity up
  - GHG emissions down
- **Public transport**
  - Fewer injuries, more exercise, fewer emissions, more social connections
- **Low meat diet**
- **Local economies**
  - Social connections





# 7. The public agenda

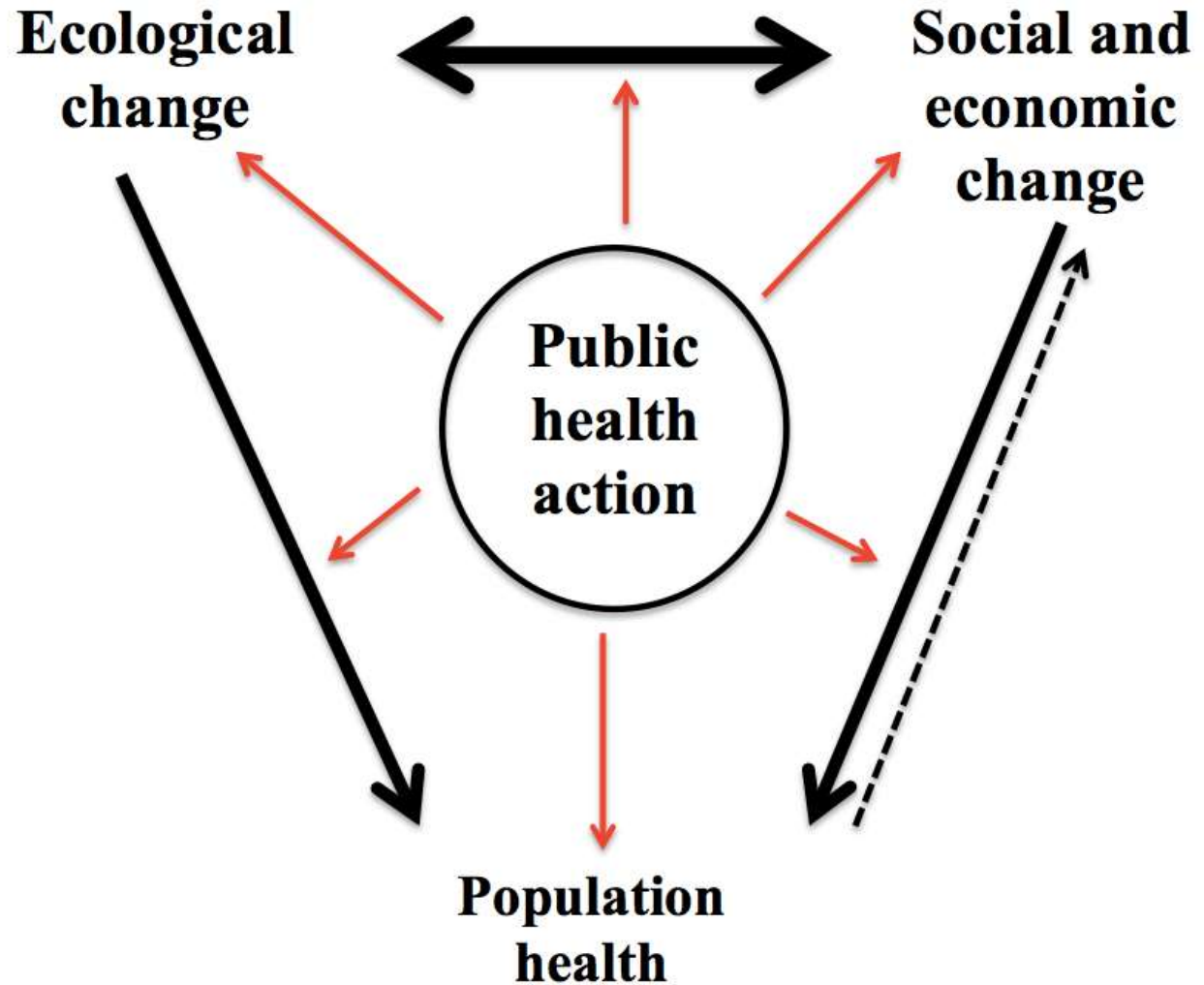


# Our ultimate message

- **The population health impacts of the ecological determinants of health are large, and comparable to the impact of the social determinants of health**
- **The two interact and must be considered as a whole – we cannot continue to be ecologically blind**

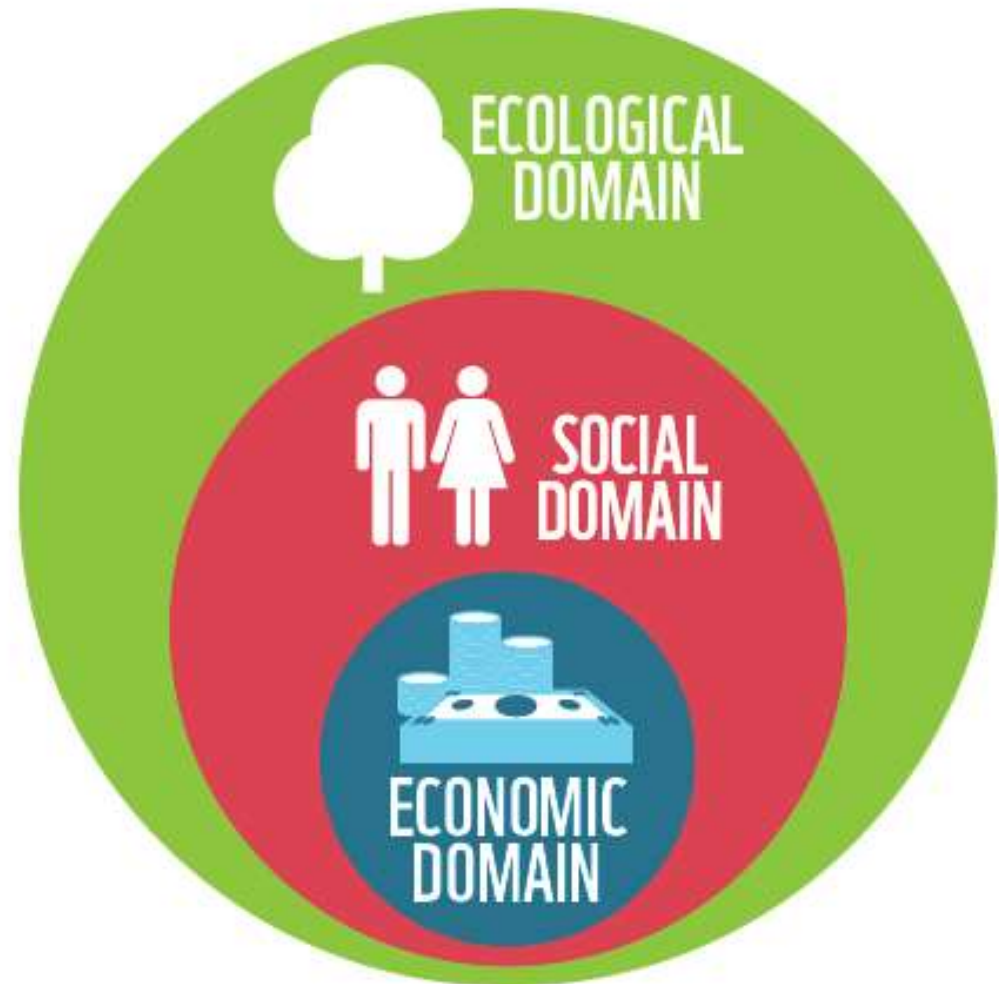


# Ecosocial Model for Public Health Action



**“Ecosystems sustain societies that create economies. It does not work the other way round.”**

**WWF  
Living  
Planet  
Report  
2014**



# The agenda for governance

**We need to**

- 1. Focus our attention on what matters to us as a community**
- 2. Measure what matters**
- 3. Develop a new economic system**
- 4. Develop new approaches to governance to better manage what matters**



# Governance - more than government

- **Governance is “the sum of the many ways individuals and institutions, public and private, plan and manage the common affairs of the city.”**

(UN Habitat, 2002)

- **Involves individuals as well as institutions**
- **The private realm as well as the public realm**







# 7a) Focus on what matters



# What business are we in?

- **To grow the economy?**
- **To maximize profit?**
- **But local governments know better**
  - **They focus on people and measure quality of life**



**We need to ‘grow’  
people . . .**

**. . . not the economy**

**“Build me a garden to grow  
people in!”**

**Jim Rouse,  
developer of Columbia MD**



# Human-centred development

- **“A Nations Health is a Nation’s Wealth”**

*Masthead of The Sanitarian,  
a 19<sup>th</sup> century public health journal*

- **“People are the real wealth of nations.”**

*Human Development Report*



**“the human person is  
the central subject of  
development”**


**Declaration on the  
Right to Development  
UN General Assembly, 1986**



# Governance for people

- **The central focus of any government must be to maximise the health, wellbeing, quality of life and level of human development of ALL its citizens**
  - **In an ecologically sustainable manner**
- **We need people-centred, planet-sensitive governance**





# **7b) New measures of progress - to better manage what matters**



# **We manage what we measure**

- **You can't manage what you  
can't measure**

**BUT**

- **what you measure is what you  
end up managing**

**SO . . . .**





# Measure wrongly and you manage wrongly

If we measure the wrong things,

- or measure them in the wrong way,

we end up managing what we measure

- and not necessarily what we should be managing



**One of the key challenges we face in the 21st century is that in many cases we are measuring — and thus managing — the wrong things.**



# A case in point - GDP

- **Developed in the 1930s**
- **One of its key architects, Simon Kuznets, warned the US Congress in 1934 that it should not be used as a measure of social welfare:**

**“the welfare of a nation can scarcely be inferred from a measure of national income.”**



# **But we focus on GDP**

- **Check any election campaign!**
- **Public policy largely becomes devoted to maximizing GDP**
- **The Ministry of Finance becomes the key ministry**



# An exercise in growing GDP

- **If you had 10 cents to invest what would be the best way to invest it to contribute maximally to GDP?**



# **GDP is a lousy measure of progress**

**It includes**

- **All the economic activity of the tobacco industry AND all the economic activity of the health care used in treating tobacco-related disease**
- **The cost of cleaning up after a hurricane or an oil spill**
- **The money we spend on war**



# **. . . and it excludes . . .**

**all the non-monetized contributions that people make to social progress, especially at the local level. This includes:**

- Volunteer activity**
- Growing our own food,**
- Raising our kids,**
- Caring for family and friends when they are ill**
- etc.**



# So you can build GDP by .

■ ■

- **Harming health/ human capital**
- **Harming the environment/ natural capital**
  - **and then trying to fix it**

**But you don't build GDP when you build social capital**





# Some alternative measures of progress

- **The Genuine Progress Indicator (GPI)**
- **The Canadian Index of Wellbeing (CIW)**
- **The Happy Planet Index**
- **Gross National Happiness (Bhutan)**

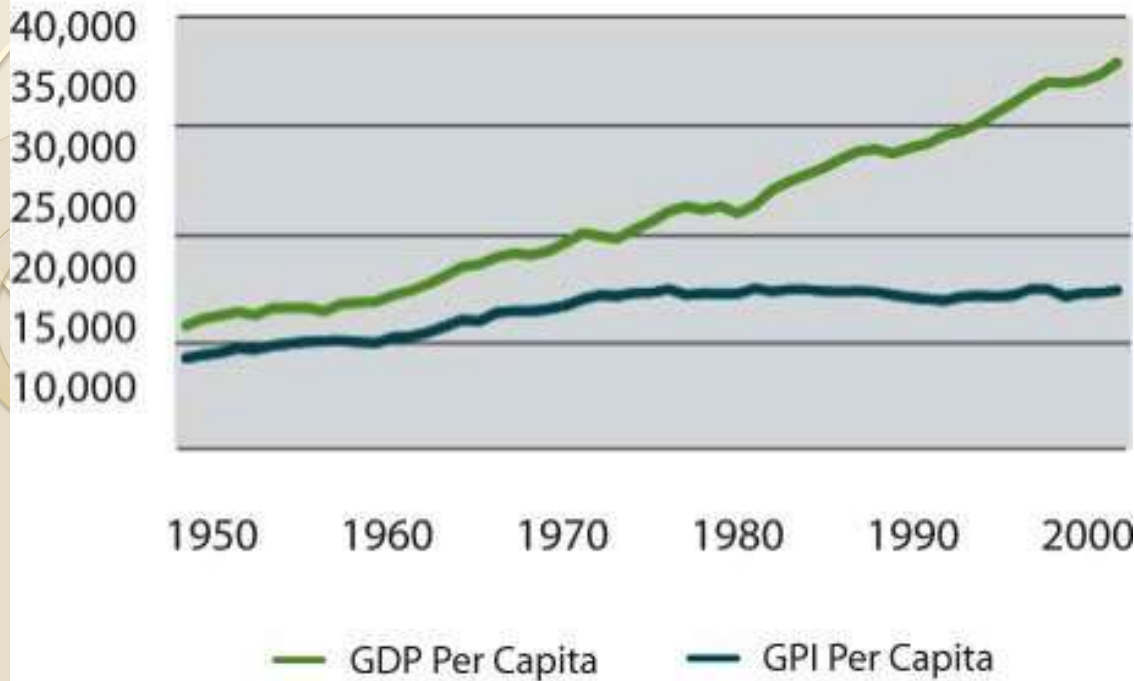


# The GPI

- **The GPI starts with the same personal consumption data that the GDP is based on, but then makes some crucial distinctions.**
- **It**
  - **adjusts for factors such as income distribution**
  - **adds factors such as the value of household and volunteer work, and**
  - **subtracts factors such as the costs of crime and pollution.**

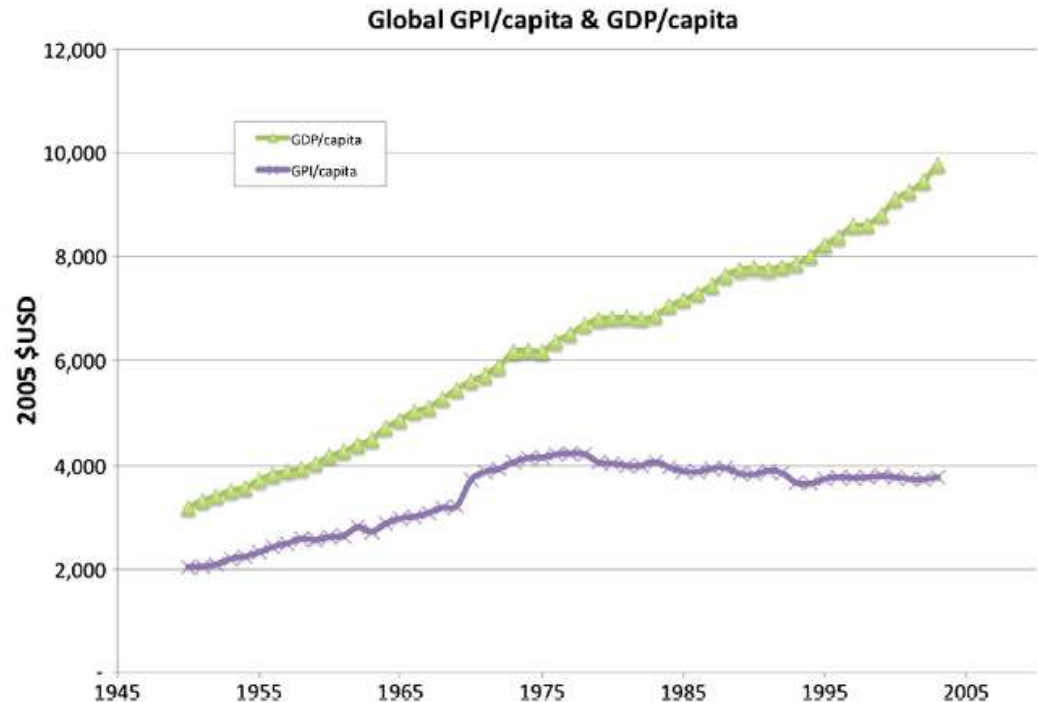
*[See hidden slides for details]*





**Real GDP and GPI per capita, USA, 1950 – 2004 (in US\$ 2000)**

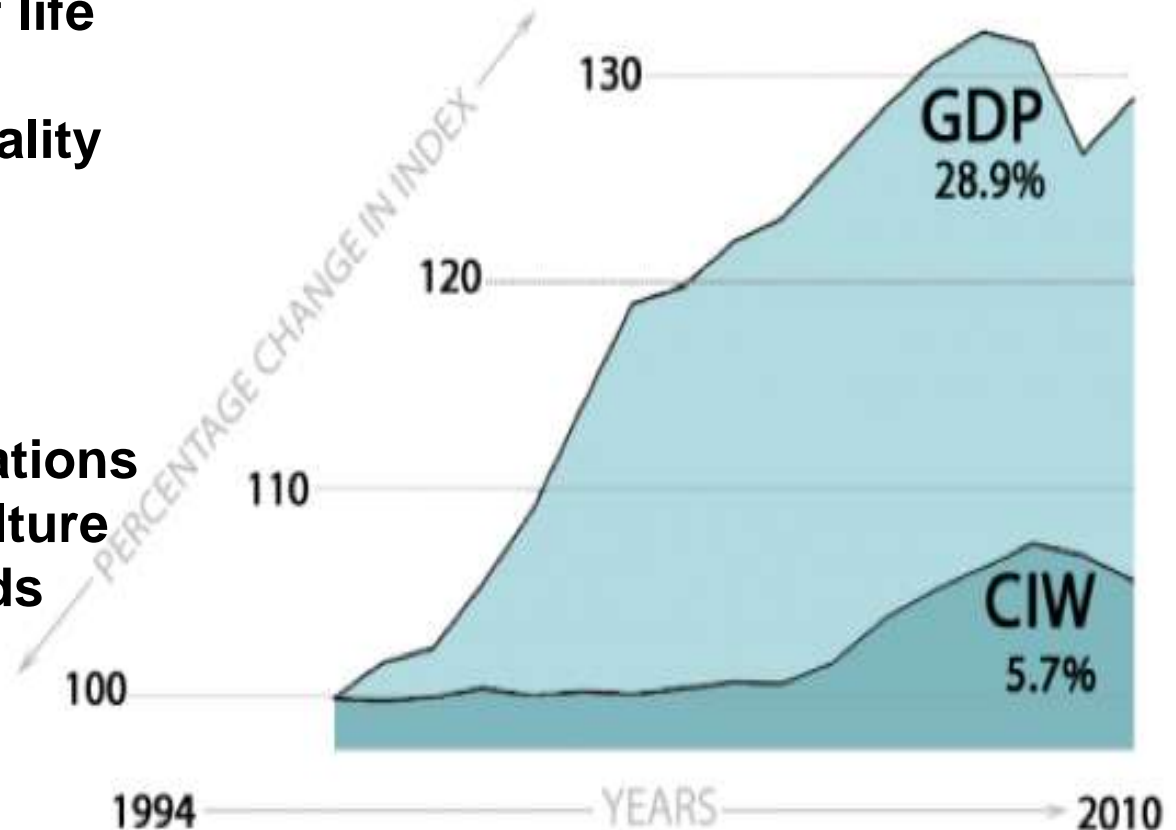
**Adjusted global GPI/capita & GDP/capita, 1945 – 2005 (2005 US\$)**



# The Canadian Index of Wellbeing

The CIW tracks changes in eight quality of life categories:

- community vitality
- democratic engagement
- education
- environment
- healthy populations
- leisure and culture
- living standards
- time use



**Canadian Index of Wellbeing –  
Composite Index, 1994 – 2010**



# The Happy Planet Index?

- **The Happy Planet Index measures what matters: sustainable wellbeing for all. It tells us how well nations are doing at achieving long, happy, sustainable lives.**
- **It was developed by the New Economics Foundation in the UK.**

**Source:** <http://happyplanetindex.org>



# How is the Happy Planet Index calculated?

The Happy Planet Index combines four elements to show how efficiently residents of different countries are using environmental resources to lead long, happy lives.

- Wellbeing
- Life expectancy
- Inequality of outcomes
- Ecological Footprint



# The Happy Planet Index

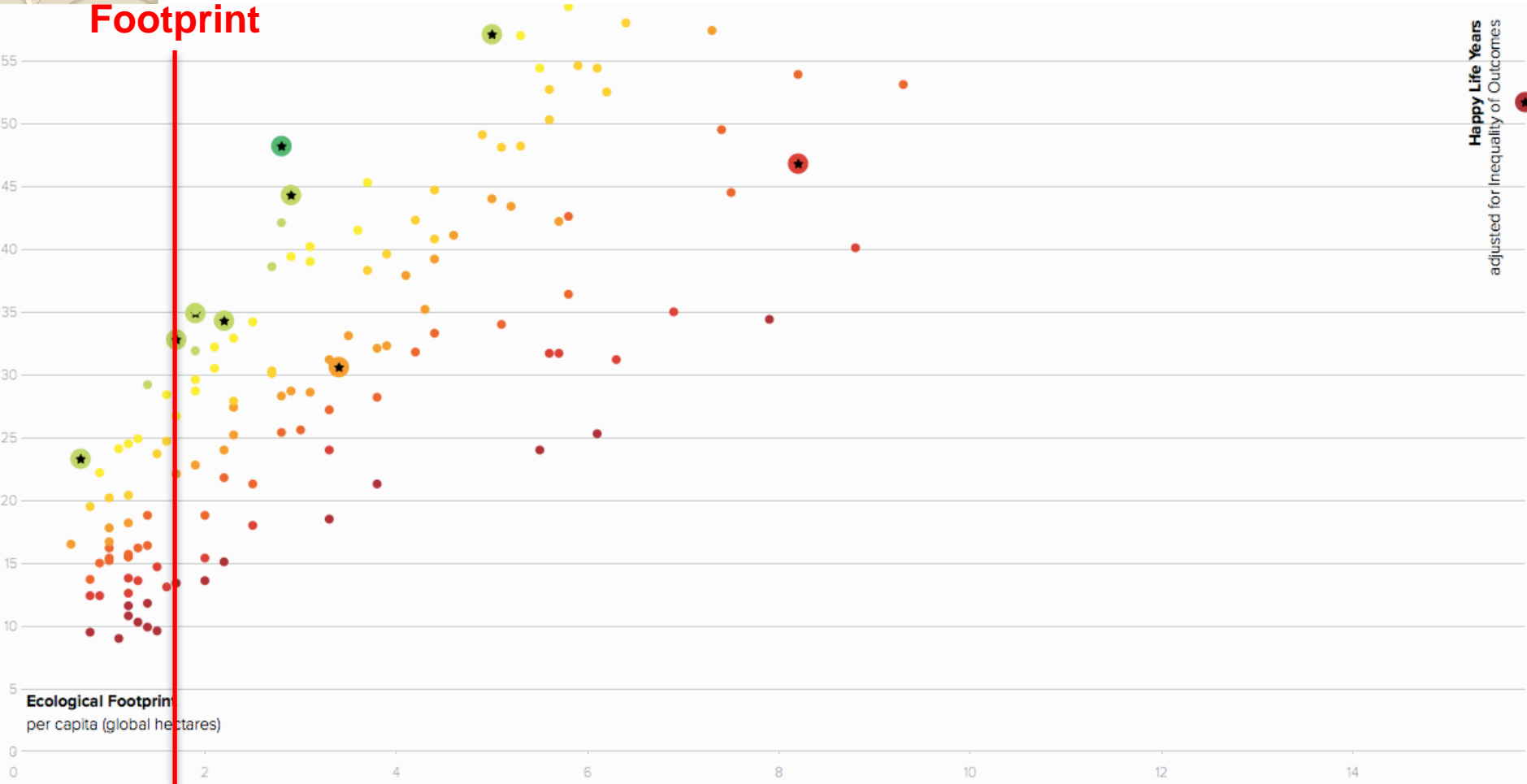
$$\text{HPI} = \frac{\text{Wellbeing} \times \text{Life expectancy} \times \text{Inequality of outcomes}}{\text{Ecological footprint}}$$

Wellbeing x Life expectancy x Inequality of outcomes  
Ecological footprint



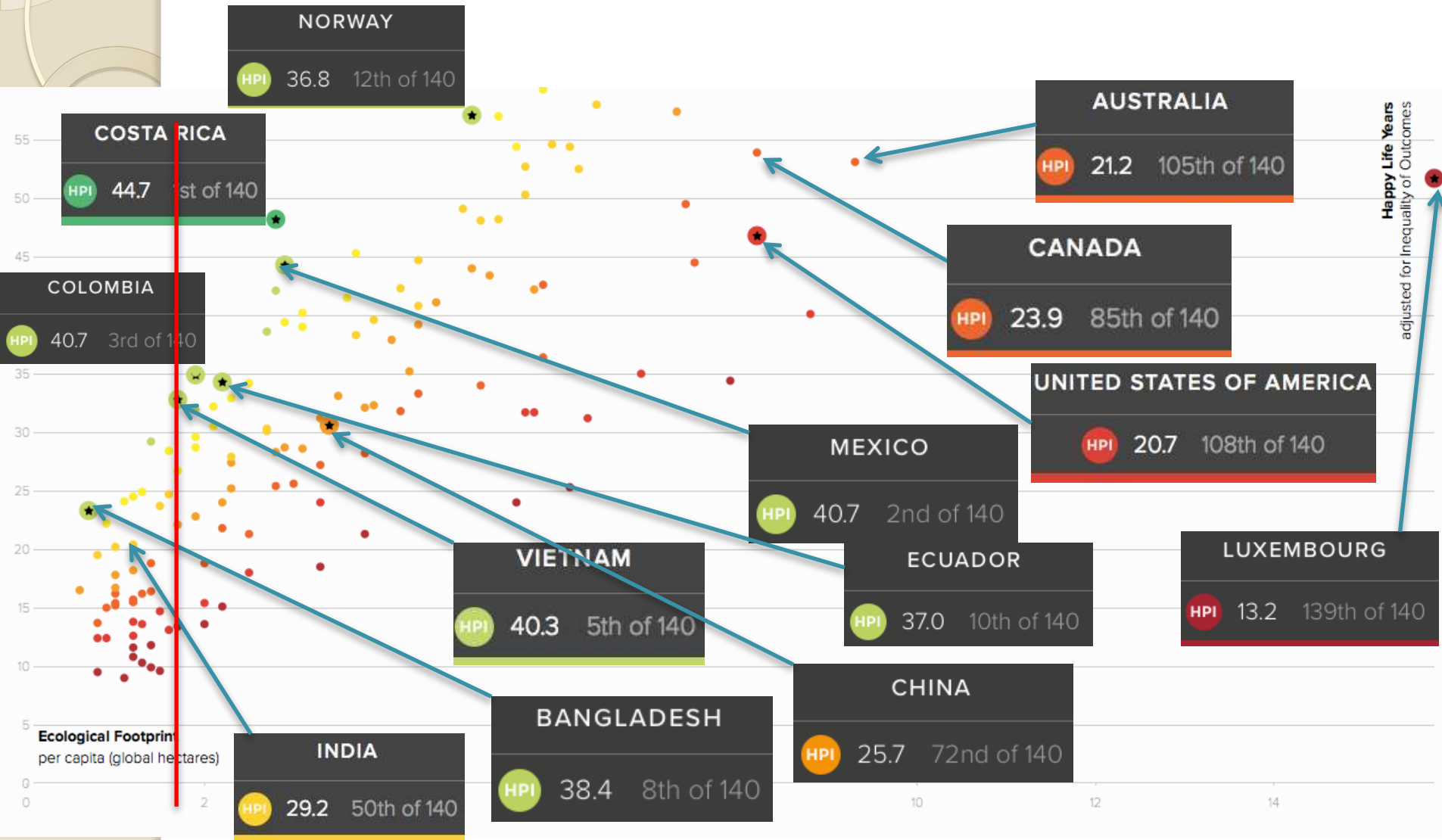
# The Happy Planet Index 2016

One Planet Footprint





# Happy Planet Index 2016



Happy Life Years  
adjusted for Inequality of Outcomes

Ecological Footprint  
per capita (global hectares)



# One-Planet living

- **Globally, our ecological footprint is about 1.5 planets**
- **Its about 4 – 5 planets in high-income countries.**
- **Globally, but also locally, we need a ‘One Planet footprint’.**
- **What would that look like? How would we get there?**










# High development, high footprint

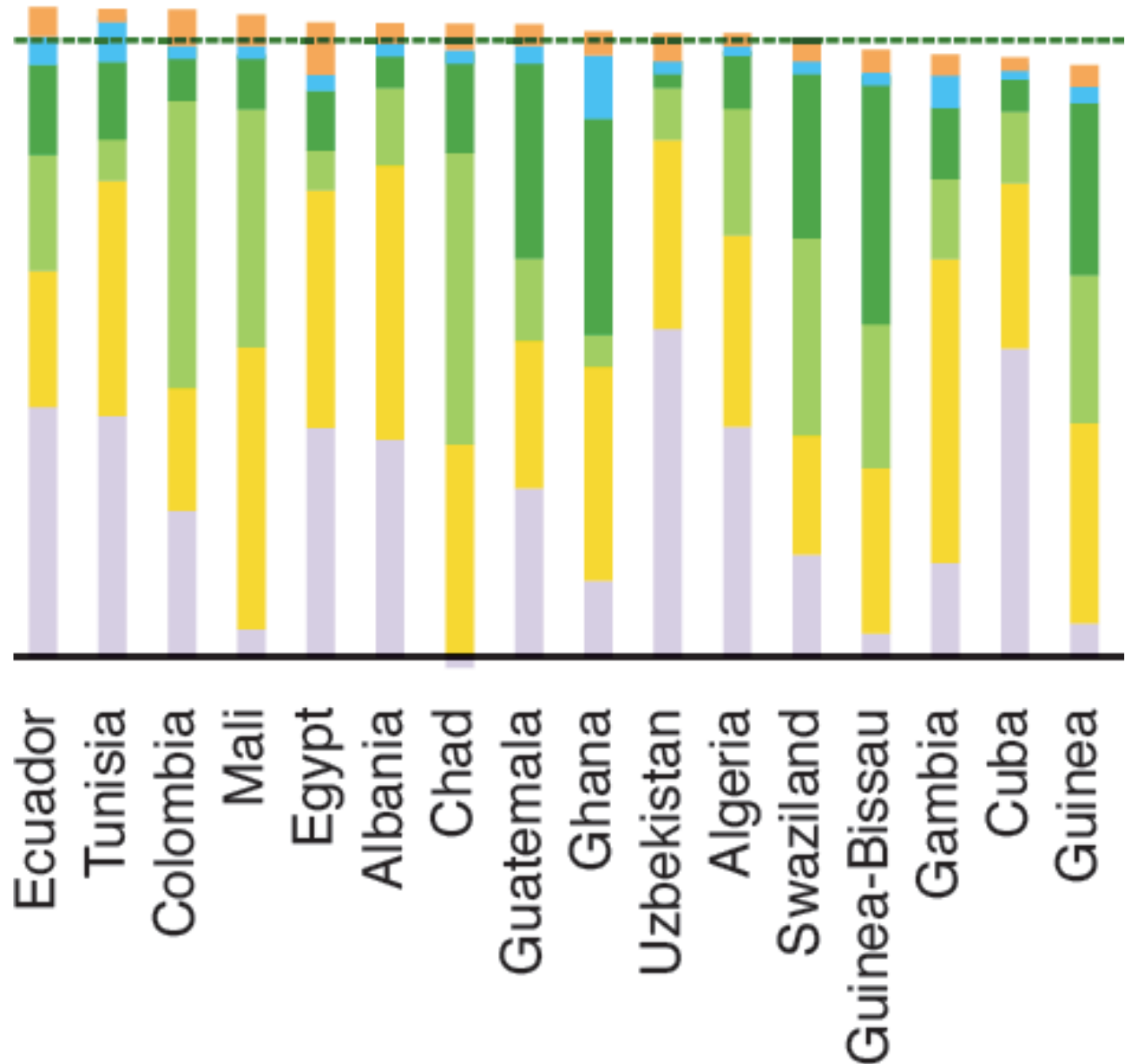
- **“The elevated human development in high income countries has been achieved at the expense of a large Ecological Footprint . Decoupling and reversing this relationship is a key global challenge.”**



# 'One Planet' Nations

## Key

-  Built-up land
-  Fishing grounds
-  Forest products
-  Grazing products
-  Cropland
-  Carbon
-  World average biocapacity



# What would a 'One Planet' community or society look like?

- **We aren't these 'One Planet' places**
  - **We don't exactly want to be them**
    - **For one thing, none of them have snow!**
- **So what is a high-tech, 21<sup>st</sup> C version – with a high quality of life**
  - **'Paint a picture' as a community/province**
  - **Model it**
- **How would we get there?**





# 7c) A new system of economics



# Ecological Economics for the Anthropocene\*

- **“Provides an urgently needed alternative to the long-dominant neoclassical economic paradigm of the free market, which has focused myopically - even fatally - on the boundless production and consumption of goods and services without heed to environmental consequences.”**
- **“The emerging paradigm for ecological economics championed in this new book re-centers the field of economics on the fact of the Earth’s limitations, requiring a total reconfiguration of the goals of the economy, how we understand the fundamentals of human prosperity, and, ultimately, how we assess humanity’s place in the community of beings.”**



- **“contributes to an emerging, revolutionary agenda based on the tenets of ecological economics and advances new conceptions of justice, liberty, and the meaning of an ethical life in the era of the Anthropocene.”**





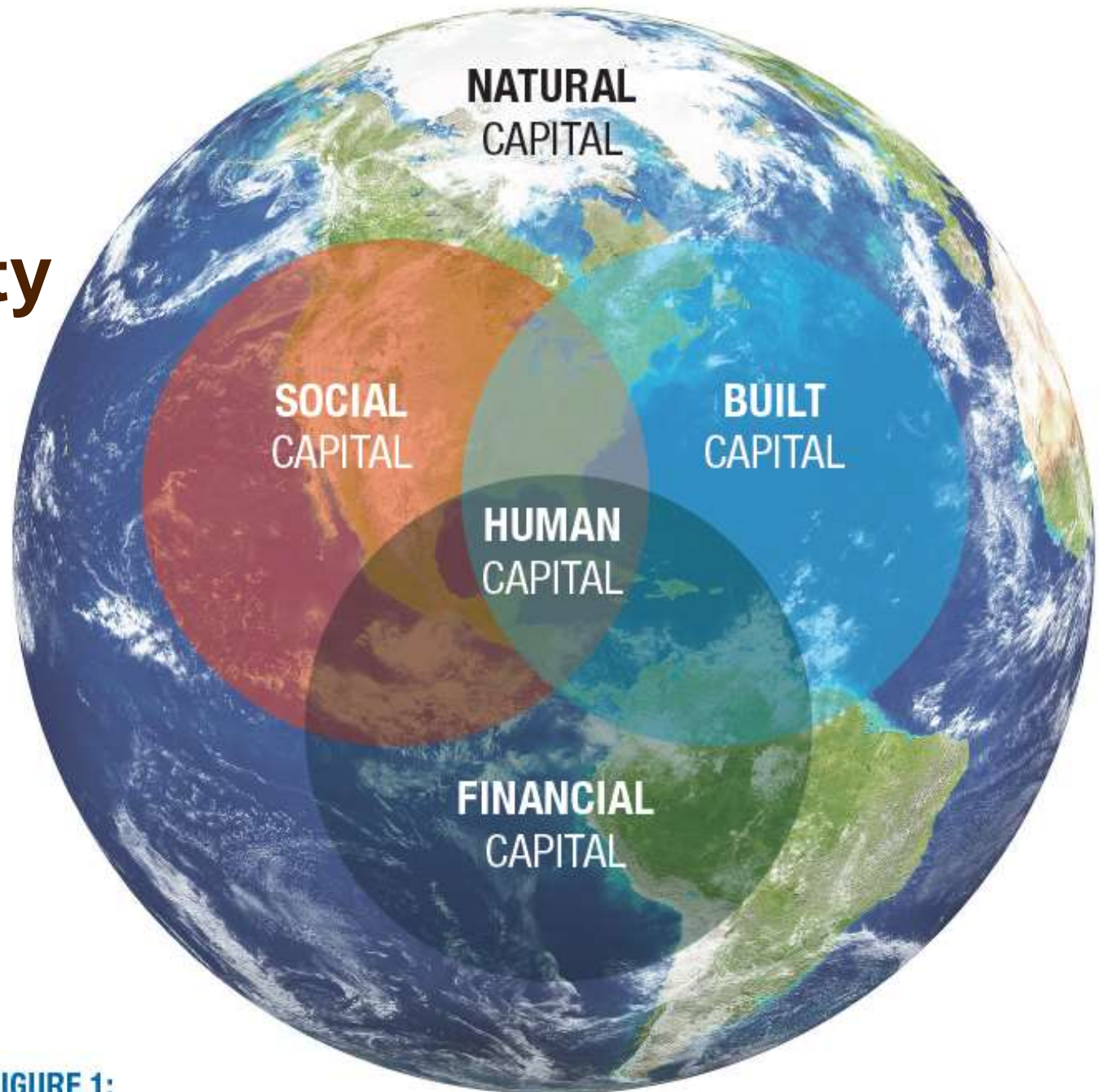


# Opening paragraph, Brown and Timmermann, 2015

A specter is haunting the Earth—the living ghost of an economic theory that, no matter how much it is assaulted or how much damage it causes, refuses to die. The economic order that is based on the premises of this theory is grinding itself into the physical face of the planet. Many indicators suggest that we are witnessing a rapid decline in the richness of life processes, including accelerating climate change, increasing loss of natural diversity, changing and expanding disease vectors, and the spreading of an unsustainable growth and consumption model of what constitutes human well-being and happiness across the globe. The spectral nature of standard economics is reflected in its inability to halt, or even recognize, our seemingly inexorable movement toward some critical boundary conditions necessary for the flourishing of life on Earth.



# The five forms of Community Capital



**FIGURE 1:**  
**COMMUNITY CAPITAL**



# Implications

**1. The health, wellbeing and level of human development of the individual is at the centre**

- **This should be our real measure of progress as a community or society**
- **It is dependent upon the overlap between the social, financial and built forms of capital.**

**2. All we do in our economic, social and human development occurs within the limits of the Earth's natural capital: there is only one Earth.**



# Implications - 2

**3. The inclusion of built capital as a separate form of capital is important because**

- We have built a massive physical infrastructure all over the world — not just cities and buildings but energy, water, agricultural, transportation and other systems**
- We are 80% urbanized and spend**
- 90% of our time indoors**



# Implications - 3

**Above all, the model shows that these forms of capital intersect and interact.**

- **Yet we often organize our society as if they are unrelated, and**
- **As if there were no limits to growth**



# Real capitalism

**Real capitalists do not build just one or two forms of capital – built and economic capital – by depleting the other three forms of capital. They build all five forms of capital simultaneously.**



# A new capitalism for the 21<sup>st</sup> century

The new capitalism must simultaneously increase

- ecological capital
- social capital
- economic and built capital
- human capital





# **7d) New approaches to governance - to manage what matters**





# The challenge

**Develop new systems and processes of governance that engage people and work with them, devising systems and solutions that**

- **Build all forms of community capital, while**
- **Maximizing human development that is**
- **Socially just and ecologically sustainable**



# Governance for people and the planet

## A 'whole of government' approach

- **The focus of the work of government must be a sustainable human development strategy**
  - **Sustainable human development in all policies**
    - **Healthy energy policy**
      - Keep carbon in the ground (the carbon budget)
    - **Healthy food policy**
      - Low-meat diet
      - UK study – reduces GHGs, improves health and LE
    - **Healthy transport policy**
      - Set up telecommute centres
      - Work from home 1 – 2 days/week
        - 20 – 40% reduction in personal commuting
        - Builds community and social cohesion

**Urban sprawl – Don't allow it**



- **Integrated/holistic impact assessments**
  - **Include people, wellbeing, social equity**
- **Tax what you don't want, don't tax what you want e.g.**
  - **Carbon taxes**
  - **End all fossil fuel subsidies, transfer to renewables**
  - **Tax consumption and waste, don't tax income**
- **A 'whole of society/community approach**
  - **Multi-sectoral Premier's/ Mayor's Councils on Sustainable Human Development**



# New forms of governance

- Participatory budgeting
- Iceland used 'crowdsourcing' for its new constitution
- Finland is using it to create new laws
- Belo Horizonte, Brazil, has a Municipal Deputy Secretary of Democratic Governance
- **Why doesn't every municipality have one?**



# **Municipal governments and local communities can lead**

- **They do not measure their progress against GDP**
- **They have led the way on a wide range of environmental and social issues in recent years**
  - **Smoking, GHG reductions, homelessness, substance use etc.**
- **They are more nimble, and there are more of them**



# Healthy communities are the basis

- **“Healthy communities are the basis of our physical, mental and social well-being. And the basis of healthy communities is a healthy environment.”**

**WWF Living Planet Report 2014**



# One planet solutions

## WWF Living Planet Report 2014



**PRESERVE NATURAL CAPITAL**  
restore damaged ecosystems, halt the loss of priority habitats, significantly expand protected areas



**PRODUCE BETTER**  
reduce inputs and waste, manage resources sustainably, scale-up renewable energy production



**CONSUME MORE WISELY**  
through low-Footprint lifestyles, sustainable energy use and healthier food consumption patterns



**REDIRECT FINANCIAL FLOWS**  
value nature, account for environmental and social costs, support and reward conservation, sustainable resource management and innovation



**EQUITABLE RESOURCE GOVERNANCE**  
share available resources, make fair and ecologically informed choices, measure success beyond GDP



# 7e) Interesting new legislation

- **Well-being of Future Generations Act - Wales**
- **Right to a Healthy Environment**
- **Safe Operating Space (SOS) Treaty**





# Well-being of Future

## Generations Act - Wales

Under the Well-being of Future Generations (Wales) Act 2015, Welsh Ministers must

- make a scheme ("the sustainable development scheme") setting out how they propose to promote sustainable development
- report each year on how the proposals set out in the scheme have been implemented; and
- publish a report assessing how effective they have been (through the scheme) in promoting sustainable development after every National Assembly for Wales election



# The right to a healthy environment

**This right is**

- **explicitly included in the constitutions of 100 nations.**
- **incorporated in the national environmental laws of more than 100 countries.**
- **included in regional human rights treaties ratified by more than 120 nations spanning Europe, Africa, Central and South America, Asia and the Middle East.**

**Boyd, 2015**



# **. . . but not in Canada**

- **All told, 181 of the UN's 193 member nations recognize that their citizens possess the right to live in a healthy environment.**
- **Canada is among the dozen holdouts, along with the United States, China, Japan, Myanmar, Afghanistan, Kuwait, Lebanon, Australia, New Zealand, Oman and North Korea.**



# **. . . although . . .**

- the right to a healthy environment is included in legislation in Quebec, Ontario and the three northern territories, the federal government and remaining provinces refuse to recognize this right.**

**Boyd, 2015**



# **The right to a healthy environment makes a difference**

- **Constitutional recognition of environmental rights has led to stronger environmental laws, better enforcement of those laws, enhanced public participation in decision-making, and most importantly, improved performance on a variety of metrics**

**Boyd, 2015**



# Safe Operating Space (SOS) Treaty

- “the Earth is our home, our spaceship, a closed world with limited resources . . . .”
- “it is now time to endow all citizens with responsibility for their spaceship”
- “Since 2014, the Earth has been recognized as a “client” by the European Court of Justice, and with the SOS Treaty, the environment won’t be silent any longer.”

Meusy, 2015, in Preface to  
*The Safe Operating Space Treaty*



# Res Communis Omnium (Things common to all – the global commons)

**“The Earth System is available to all and cannot be appropriated by anyone, not even by a state. When this common property extends to all humankind, the goods come to be considered as *res omnium*. They are the common heritage of humankind so all human beings, both the present and future generations, have the right to access them in a favourable state. However, given its character as an exhaustible resource, it is necessary to create a legal framework for both the use and the benefits realized in the common good.”**

