Surviving the Anthropocene

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Navigating the ‘perfect storm’,
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Rio + 20

• United Nations Conference on Sustainable Development, Rio de Janeiro, June 2012
  – 20 years after 1992 Earth Summit in Rio and Agenda 21
• ‘a chance to move away from business-as-usual and to act to end poverty, address environmental destruction and build a bridge to the future’...

Rio + 40

• 1972 Stockholm Conference on the Human Environment
• 1972 The Limits to Growth (D. H. Meadows et al. Club of Rome)
  – 12m copies in 37 languages

What difference does 40 years make?

Rio+20

• ‘smart measures that can reduce poverty while promoting decent jobs, clean energy and a more sustainable and fair use of resources’.
• Two themes:
  1. a green economy in the context of sustainable development and poverty eradication;
  2. the institutional framework for sustainable development.

Deepwater Horizon April 2010

Torrey Canyon, Seven Stones Reef, 1967.
Spaceship Earth

- 1966: ‘The closed economy of the future might be called the ‘spacesman’ economy, in which the earth has become a single spaceship, without unlimited reservoirs of anything, either for extraction or for pollution.’
- ‘in a space ship, there are no sewers

Mainstream Sustainable Development

- 1987 World Commission on Environment and Development (Brundtland Report)
- 2002 World Summit on Sustainable Development
- 2012 Rio + 20

The Humanized Biosphere

- ‘Last of the Wild’ Project, Center for International Earth Science Information Network (CIESIN), Earth Institute at Columbia University.

Kareiva et al., 2007 ‘Domesticated nature’, Science.

The Anthropocene

- A new era in geologic time
- The ‘age of humankind’
- Paul Crutzen
  - Nobel Prize winner: ozone layer
  - 2002 Nature 415: 23
- When did the Anthropocene start?
  - Late 18th century (steam engine 1784)
  - 8000 years BP (agriculture)
- ‘Great acceleration’ from 1950

New Economics Foundation
The Anthropocene’s ‘Great Acceleration’

- The Anthropocene: rate of change
  - ‘the rates, scales, kinds and combinations of changes occurring now are fundamentally different from those at any other time in history; we are changing the earth more rapidly than we are understanding it’ – Peter Vitousek et al. Science 1997

Planetary Boundaries
1. Climate Change
2. Ocean acidification
3. Stratospheric ozone layer
4. Nitrogen and phosphorus cycle
5. Global hydrological cycle
6. Land use change
7. Biodiversity loss
8. Atmospheric aerosol loading
9. Chemical pollution

The Challenge of Sustainable Development
- Three dimensions:
  - Ecological: natural capital
  - Economic: livelihoods
  - Social: inter & intragenerational equity
- One Challenge
  - Rio + 20
  - Millennium Development Goals Review 2015
  - Convention on Biological Diversity
    - 2020 target

De-carbonise the World Economy
- Reduce fossil fuel use
- De-link energy generation from carbon production,
- De-link energy consumption from economic growth
- De-materialise production

Transform Production
- Technical and procedural innovation:
  - Novel technologies
  - Radical reduction in energy and material intensity
  - Technologies to increase flow of services not products
  - The circular economy
- Regulation:
  - External: drive improvement; level the playing field
  - Internal: move from reactive ‘end-of-pipe’ solutions to integrated and holistic frameworks for environmental management.
Transform Consumption

- Reduce consumption: to reduce overall human demands on the biosphere to levels that can be sustained;
- Redirect consumption: to less destructive forms;
- Redistribute consumption: to the less well off

How do you sell contraction and convergence?

- In industrialising countries (China, India, Brazil)?
- In developing countries (Nigeria, Kenya, Somalia)?
- In rich industrialized countries?

Rearranging deckchairs?

- Setting targets for deckchair occupancy
- Planning how to model optimal deckchair distribution
- Developing the deckchair distribution evidence base

Sustainability and Human Aspiration

- Measurement
  - Beyond GDP
  - Beyond pricing nature
- Regulation
  - Markets and states
- Imagination:
  - Redefining the good life for 21st Century
- Leadership:
  - Inter-governmental organisations?
  - Politicians?
  - Bureaucrats?
  - Business people?
  - Academics?
  - NGOs?

The Anthropocene

- A very uncomfortable place to be