Centre for
Climate Change
Economics and Policy

Grantham Research Institute on
Climate Change and
the Environment

ENVIRONMENTAL JUSTICE AND CLIMATE CHANGE

Nicholas Stern

Chair of the Grantham Research Institute on Climate Change and the Environment,
Chair of the Centre for Climate Change Economics and Policy,
IG Patel Professor of Economics & Government,
President of the British Academy

London School of Economics and Political Science

Vatican
10 September 2015

The two defining challenges of our century

Managing climate change and overcoming poverty.

- If we fail to manage climate change: we will create an environment so hostile that lives and livelihoods will be destroyed.
- If we try to manage climate change in ways which put barriers to overcoming poverty: we will not have the coalition we need to manage climate change.

If we fail on one, we fail on the other

The risks are unprecedented for humankind

Damage from climate change intensifies as the world gets warmer:

- Already at 0.8°C at edge of experience of Holocene and civilisation of last few thousand years. Seeing strong effects now; yet small relative to what we risk. Beyond 2°C is dangerous – risk of tipping points.

Temperature increase of 4 or 5°C or more not seen for tens of millions of years (homo sapiens, 250,000 years):

- Likely be **enormously destructive**, including much more intense extreme events.
- Deserts, coastlines, rivers, rainfall patterns, **the reasons we live where we do, would be redrawn**.
- Potential cause of migration of hundreds of millions, perhaps billions, of people around the world: **likelihood of severe and sustained conflict**.

What to do to hold warming below 2°C

- Necessary emissions path for 50-50 chance of 2˚C:
  - **under 35Gt** in 2030; **under 20Gt** in 2050; zero by end century.
- Can do a little less earlier and a little more later and vice versa but shape of feasible paths similar. Some studies use low forties ($GtCO_2e$ p.a.) for 2030 for 2°C but requires very strong action later.
- Necessary path likely to require:
  - **zero emissions from electricity** around mid-century**.**
  - **zero total emissions by the end of century.**
  - **Net negative** in **major sectors** well before **end of century.**
- Can burn (uncaptured) less than half of established hydrocarbon reserves and retain a reasonable chance of holding to 2°C.

The last decade has taught us so much

1. **Greater understanding of how economic growth, development, and climate responsibility are intertwined.**
   - Growth and development complement and support climate action (see e.g. NCE "Better Growth, Better Climate", 2014)
   - Portraying them in conflict misunderstands development and the opportunities of a low-carbon transition → an 'artificial horse race'
2. **More intense understanding of the dangers of delay**.
   - Economies are transforming. Next two decades fundamental. Long-lasting investments are being made in urbanisation and energy systems.
   - Our cities will grow from 3.5bn to ca. 6.5bn by 2050. They could be more congested, more polluted, more wasteful → patterns of the past. But can be difficult.
   - Continuing structural change and inadequate management of cities and energy intensifies the danger of delay.
3. **The damages from fossil fuels (beyond climate) immense and more apparent.**
   - Air pollution destroying many millions of lives and livelihoods per year.
   - China air is equivalent to 40 cigarettes/day, kills 4000/day (Berkeley Earth 2015); India worse; Germany, Korea, and indeed most countries have severe problems.

Critical importance of infrastructure investment

- Magnitude of global investments needed over next 15 years: order of $90tn (mostly in developing economies), $6tn a year on average:
  - We need both better quality and greater scale.
- Lack of infrastructure is one of most pervasive impediments to growth and sustainable development.
  - Good infrastructure: **unshackles and removes constraints** to growth and inclusion. It **fosters** education and health
  - Bad infrastructure: **kills** people, leaves **unsustainable** economic burdens for future.
- Investing in infrastructure can boost demand, raise productivity and long-term growth.
- Unlocking good infrastructure needs action on **both** policy **and** finance.
- Must expand capacities of development banks and to foster profitable and long-term capital, including from institutional investors.

Hydrocarbons are very expensive: tackle distortions in the market

- Fossil fuel subsidies, the lack of carbon pricing, and especially a distorted price for coal are pervasive.
- IMF: recently estimated total cost of fossil fuel subsidies (inc. pollution and climate – together contribute 75%): of the order of **$5.3 trillion a year**.
- **Real price for coal is not $50/t but well over $200/t** when we take into account the impact on pollution and climate.
- These are **not abstract externalities** but the killing of people now from air pollution and in the future from climate change – surely **real costs by anybody's standards.**
- **Wrongly and perversely, high carbon is still seen as the low-cost option.**

Ethics of climate change (I)

- All major approaches to moral philosophy seem to point in same general direction: strong action to reduce emissions is morally required.
- We can examine a number of approaches beyond the standard economics: Kantian, virtue ethics, social contracts, rights/liberty…
- Discounting future *welfare* or *lives*:
  - Weights the welfare or lives of future people lower than lives now (irrespective of consumption/income) purely because their lives lie in the future.
  - It is discrimination by date of birth. Unacceptable relative to notions of rights and justice

Ethics of climate change (II): Intra-generational issues

- A proposal: Equitable Access to Sustainable Development. Language of COP16 in Cancun, 2010.
  - All are entitled to **sustainable development** as part of **dynamic** and **collaborative** transformation to a zero-carbon world.
  - **Choice of sustainable development** path is determined by nations; for developing countries that path should be **supported by rich countries**.
- Common actions; but rich countries cut faster and generate strong examples; promote flows of finance and technology.
- Contrast with “burden-sharing”, “others should pay incremental cost”, zero-sum games; “common but differentiated responsibility” (CBDR).
- EASD language and concept contain ideas of CBDR but are more dynamic, collaborative, focused on opportunity, and explicit on equity.

Leadership is critical: politically and morally

- Political will for action is not yet sufficiently strong:
  - It must be founded in evidence, argument and discussion and in values.
- Moral arguments for combining growth and climate responsibility are overwhelming.
  - Degrading the environment (via climate change or otherwise) **denies all (including those yet to be born) the right to development**.
- His Holiness the Pope has shown extraordinary leadership in taking that discussion to the world.
- We now see that **we can effectively combine rising living standards and the responsible management of climate change.**
- Only by combining political and moral leadership and social movements will the necessary decisions be taken with the urgency required.

Implications for Paris (I): Identifying the gap and ramping up ambition

- Closing the gap to 2°C. Current pledges look around 55-60 $GtCO_2e$ per annum in 2030. An important improvement on BAU (ca. 65-68).
- **Strong efforts needed to ramp up** ambition before and after Paris: most or many 2°C paths would be around 40 by 2030.
- Paris should **not be regarded as a one-off opportunity** to fix targets. It should be the first step of many, including regular reviews.
- Must now recognise that high emission levels over the next 20 years imply **zero carbon** by the second half of this century looks necessary (G7 Communique, Elmau, Germany 2015)
- More broadly, Paris is chance to build understanding not only of threats and **risks** but of the great **opportunities** that lie in the transition to the low-carbon economy.

Implications for Paris (II): Creating understanding and mutual confidence

- Poverty reduction, sustainable development and climate action support each other: "**Better Growth, Better Climate**"
- Much or most of the necessary action, country-by-country, is in the **vital interest of the country itself**
- The **urgency is still greater than we thought**: great danger of lock-in to high-carbon systems as our economies are transformed and rapidly urbanised.
- **Importance of collaboration to generate the scale and quality of investment necessary gets still stronger:**
  - Finance and technology,
  - Rich countries setting strong examples, and
  - Clarity, soundness and stability of policy, nationally and internationally.
- Examples will come from everywhere: we can now enter a period of extraordinary **creativity, innovation, investment and growth.**
- We can rise to the two challenges of our century – **overcoming poverty** and **managing climate change**. If we fail on one, we fail on the other.