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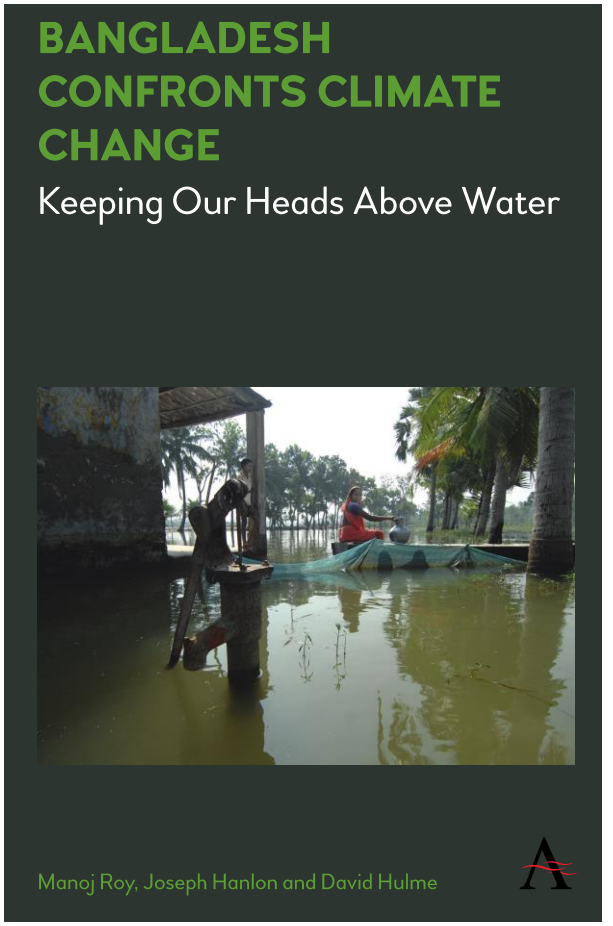
Bangladesh Confronts Climate Change:

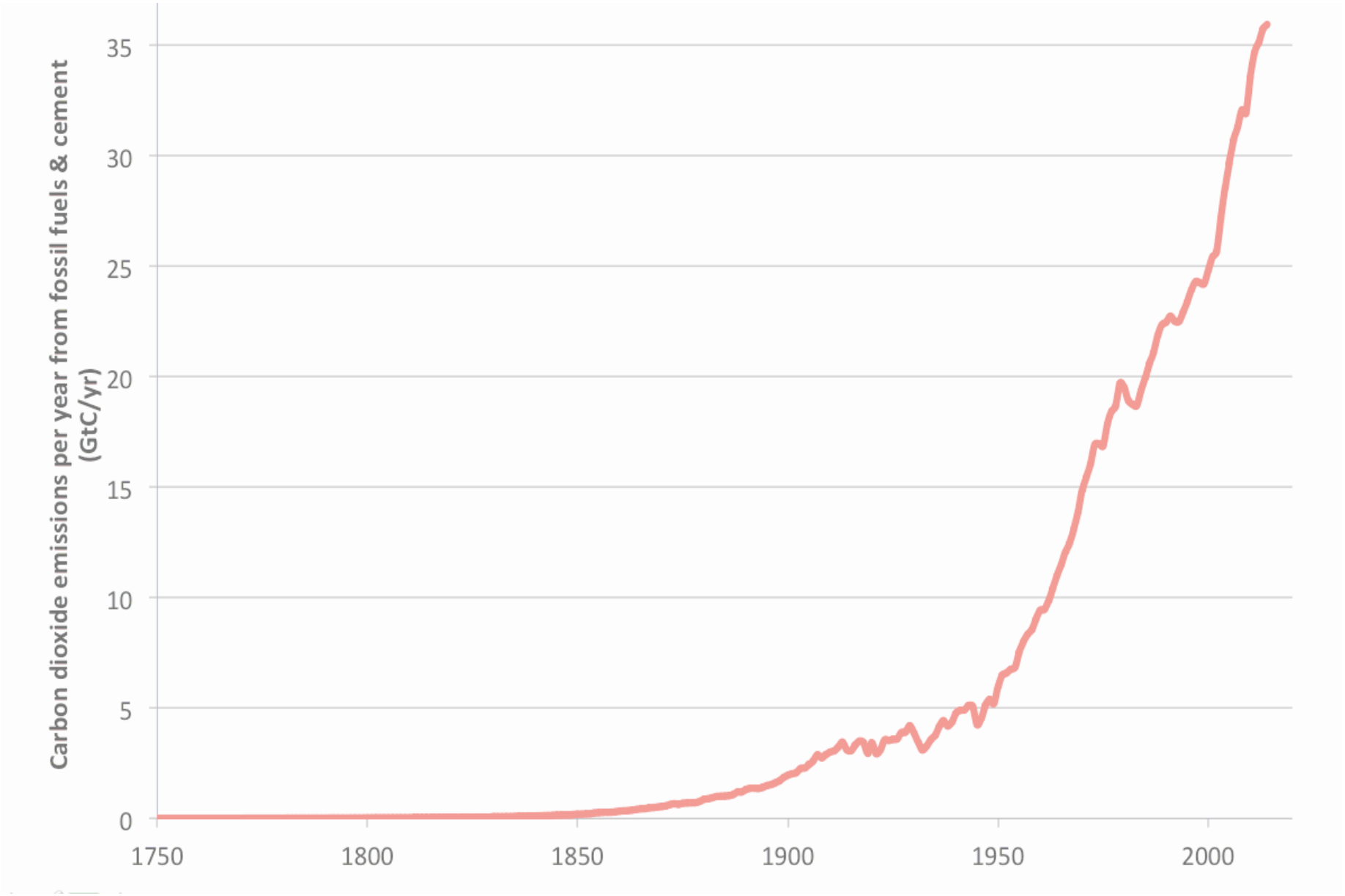
Keeping our heads above water

18 February 2017



David Hulme,
Global Development Institute,
University of Manchester (and thanks to Kevin Anderson)
www.gdi.manchester.ac.uk www.effective-states.org

Backdrop to **Paris**



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IPCC (Intergovernmental Panel on Climate Change) **predicts climate change will make Bangladeshi environment more harsh:**

- Stronger cyclones (but no increase in number)
- Increased and more intense rainfall.
- Increased river flooding
- Sea level rise

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Can Bangladesh cope?

Until 2055, Bangladesh can cope – *at high cost*.

After that, temperature matters:

- 1.5°C (over pre-industrial levels). (**Now 1.2 °C**)
  global warming peaks in 2050 and Bangladesh copes
- 2.0°C – global warming peaks in 2100 –
  much higher cost but Bangladesh could cope.
- 2.7°C – promised in Paris last year ➔ >3.0°C next century.

A different world – parts of Bangladesh drown

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Bangladeshi scientists leading on climate change for 30 years.

⇨ **Bangladeshis know what is coming**

⇙ ⇘

International negotiation to Reduce carbon emissions

More Adaptation

Agreements so far are not enough

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Bangladesh is one of most vulnerable countries in the world – but refuses to be a helpless victim

- Taking the lead for LDCs in global negotiations – pushing for 1.5°C limit to global warming.
- Climate Vulnerable Forum and V20
- Using its own expertise to adapt to climate change – often building on vast experience of living in a challenging environment.

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Starting point: a living delta

Water from the Himalayas + 1 billion tonnes/year of sediment create the delta.

Annual floods & monsoon rain create rich farmland.

But

- Erosion - rivers shift, banks eroded, new islands.
- Catastrophic floods, roughly once a decade.

Plus annual cyclones.

And 1/3 of Bangladesh < 3m above sea level

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Basket case to development success

1971 – independence – Kissinger aide:

Bangladesh is a “basket case”

Now – Feeds itself

Better health standards than India

Fertility rate 2.2 births/woman

How? – Economic growth (6% for 20 years)

Demographic dividend + human dev’t

Innovation, adaptation, research – eg local improved *boro* rice, microfinance, solar

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Cyclone deaths down 99%

Three "super cyclones"	**How?**
1970 – 500,000 dead	Shelters
1991 – 138,000 dead	Early warning
2007 – 3,363 dead	50,000 volunteers

Cyclone Roanu –
21 May 2016 - **538,000**
people in shelters

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BUT, megacities are a challenge to understanding and action

- Climate change has profound implications for Dhaka and Chittagong and especially their poor and low income households – more than 40% of city populations
- What climate changes means for people who live in *bustees* (informal settlements) and work informally is not well understood
- They live in highly vulnerable locations in housing without building standards…flooding, cyclone damage, disrupted livelihoods
- Bangladesh's Climate Change Strategy and Action Plan identifies 20 priority actions, none related to the deepening problems of earning a living, accessing water and sanitation services, keeping healthy and raising children in poor urban communities in an era of climate change

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Raising the land to match sea level rise

Complex living delta.
Annual floods bring 1 billion tonnes of sediment from the Himalayas. Most to Bay of Bengal.
Sediment builds new islands in rivers & on coast.
Sediment compacts and land level falls.
But land same level above sea as centuries ago.
What is happening?
Monsoon – keeps sea water out.
Dry season – tides reach 300 km inland – bringing sediment & raising the land

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Dykes and polders were not the answer

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Tidal river management to raise the land

- Historic system of temporary embankments – keep in monsoon rains for rice crop, then cut to allow tidal flooding.
- 1980s local people cut the embankments. Dry season tidal floods raised land 1.5m in 2 years.
- Communities worked with government engineers & scientists to develop ‘Tidal River Management’ – flood polder for 3 years every 30 years.
- Perhaps land rise can be managed to match sea level rise – ***But who will pay?***

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Bangladesh did not cause global warming

- Bangladeshis know what is coming – worse floods, more devastating cyclones, sea level rise
- Strong understanding of what must be done
- Already spending $1 bn/year on climate –

  ¾ own funds & much of rest World Bank loans
- Who will pay for more & stronger cyclone shelters, research, raising the land?

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The countries who have caused global warming?

- 2008, PM Gordon Brown pledged £75 mn immediately and £75 mn later. For climate change in Bangladesh
- 2016: Only £61 mn disbursed - £14mn returned to UK!
- International agencies insistence on establishment of a Multi-Donor Trust Fund stalled disbursements
- MDTF was to be managed by World Bank – strong objections to its fees (10-15%) and external control
- More effective modalities? Green Climate Fund: disbursed $40 mn in 2015 for coastal infrastructure
- But now…Trump and climate change as a ‘hoax’

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Mitigation, NETS and Equity

- My thanks to Kevin Anderson at U-Manchester
- ***Serious mitigation needs to start today***
- ***Carbon budget targets*** better than TºC targets
- ***Technological fixes*** - can we rely on negative emissions technologies (NETS) and Biomass energy + carbon capture and storage (BECCS)?
- ***Equity - who needs to change?***

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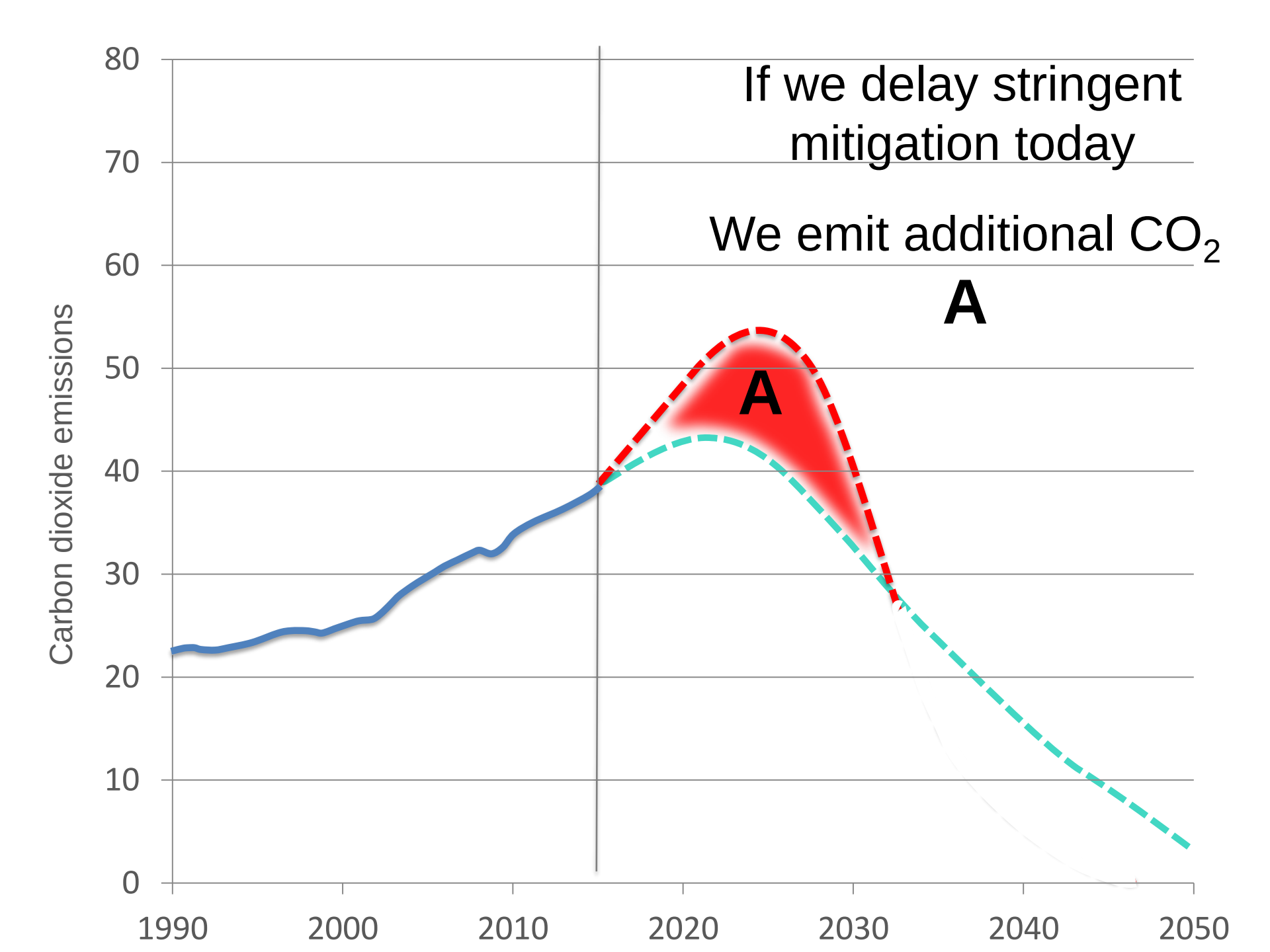
…and, Economics

"…how have we [scientists] arrived at this compliant stasis…to avoid exceeding the maximum rate of emission reduction dictated by economists, 'impossibly' early peaks in emissions are assumed, together with naïve notions about 'big' engineering and…low carbon infrastructure".

Kevin Anderson and Alice Bows (2012)


If we delay stringent mitigation today
We emit additional CO_2
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A
Carbon dioxide emissions
80
70
60
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1990
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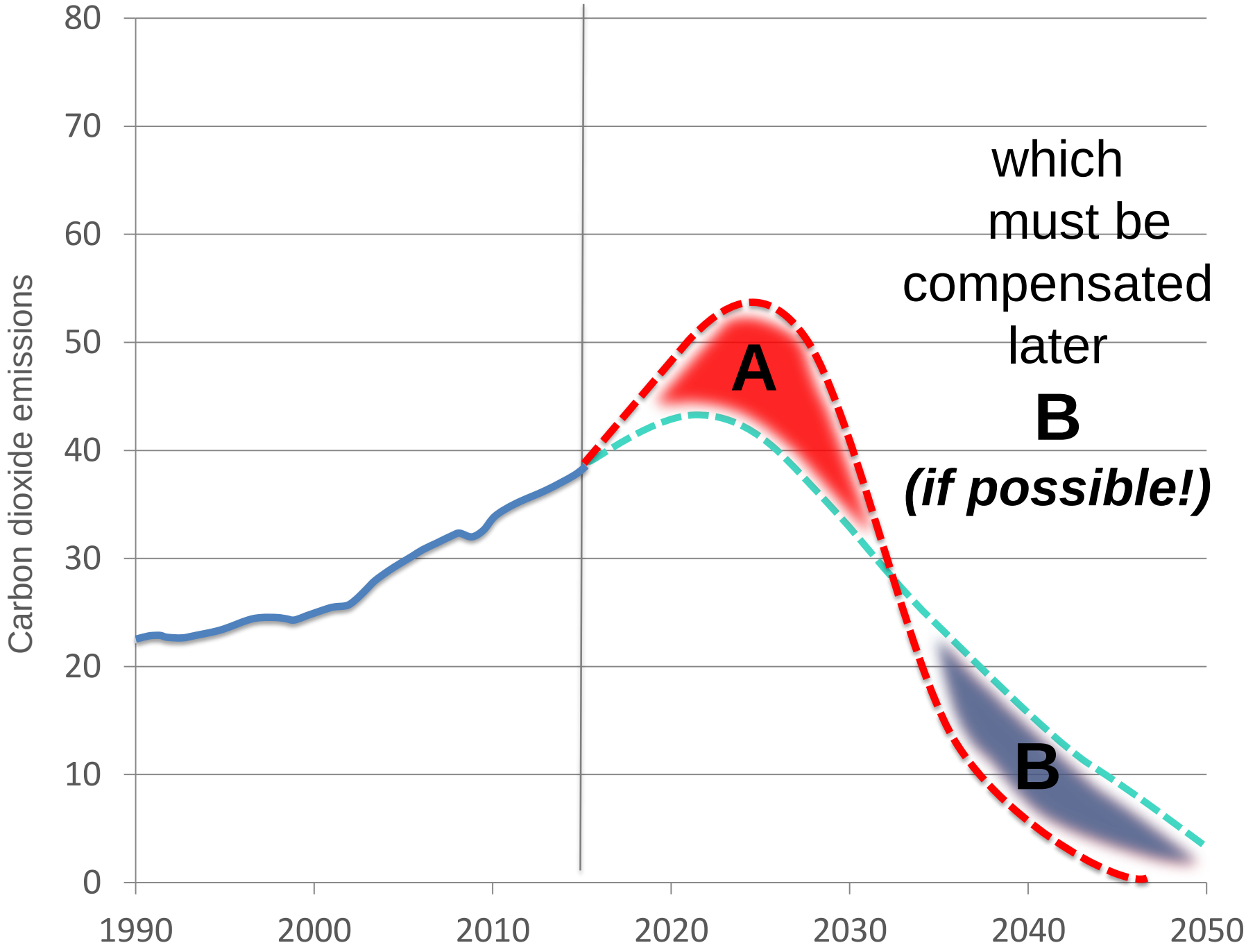
80
70
60
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10
0
Carbon dioxide emissions
1990
2000
2010
2020
2030
2040
2050
A
B
which
must be
compensated
later
B
(if possible!)

How can this fit with the Paris euphoria?

… by pulling a rabbit from the magician's hat

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NETS and BECCS 1

- ***NETS - Negative emissions technologies***
- ***BECCS – Biomass energy with carbon capture and storage***
- Grow trees, harvest, burn in power stations, capture CO_2, liquefy CO_2, pump underground

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NETS and BECCS 2

- But, this ***has never been done at scale***, huge technical and economic unknowns, profound implications for food supply and biodiversity
- ***Means planting an area the size of India*** (perhaps 2 or 3 times the size) every year…year after year…and secure underground storage
- Means ‘Paris’ can pretend mitigation not ***urgent***

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Emissions and equity

- ***50% of global CO_2 is from 10% of population***
- Top 10% of emitters have a carbon footprint 2500 x higher than bottom 10%
- If top 10% of global emitters reduced their carbon footprint to the EU average…
- Global emissions cut by around 33%

So, who is in this key 10% group?

So, who is in this key 10% group?

So, who is in this key 10% group?

So, who is in this key 10% group?

And we know who's in this key 10% group

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Conclusions

- ***Serious mitigation has to start now***

- ***Top 10% of emitters have to change…now***

  GDI RCs – 50% of international meetings virtual

  Kevin Anderson – zero flying, no car, no fridge

- ***CVF and G77 countries, such as Bangladesh, are not waiting to be saved by rich countries*** – already adapting and financing adaptation

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Bangladesh is not the helpless victim presented in the West

- Rich countries and richer people (including Donald Trump) must cut carbon emissions now.
- Bangladesh is adaptating – cyclone shelters, flood protection, raising the land, improved crops. ***But who pays?***

And who decides what to do?

Must the poorest in Bangladesh pay for the global warming caused by the US, EU and other industrialised countries?

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THANK YOU

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