



Climate Change:

Facts and politics; science
and art; present and future

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Inconvenient truth



- Climate change is real
- The world needs to cut emissions **drastically** and **urgently**
- Poorest – not responsible for climate change – are worst impacted
- We will lose development dividend



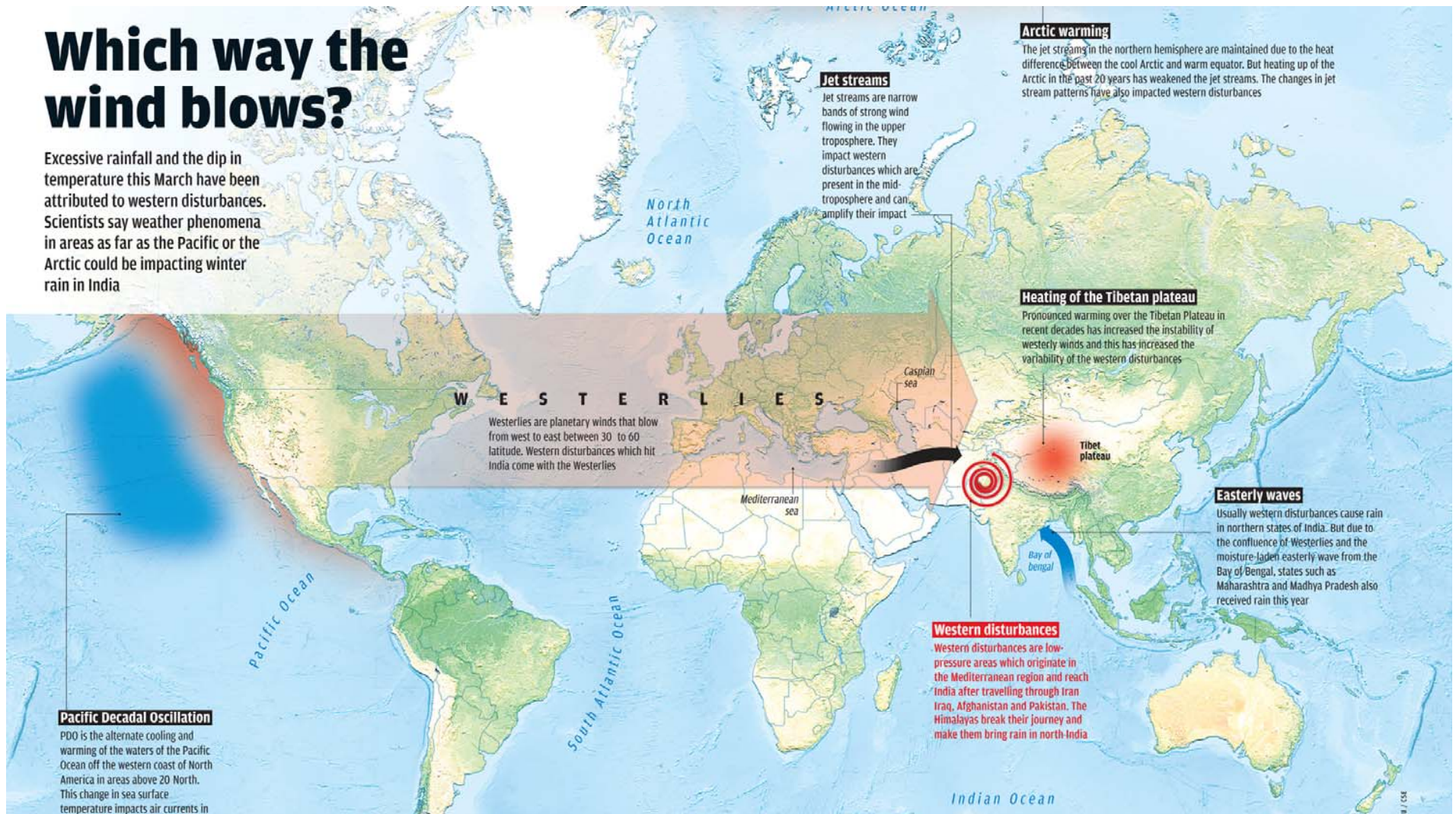
The face of India's farmer
Grief, despair, desperation
Unseasonal rain, hail, freak storms have
destroyed crops over millions of hectares

Not just normal variability



Which way the wind blows?

Excessive rainfall and the dip in temperature this March have been attributed to western disturbances. Scientists say weather phenomena in areas as far as the Pacific or the Arctic could be impacting winter rain in India



Pacific Decadal Oscillation

PDO is the alternate cooling and warming of the waters of the Pacific Ocean off the western coast of North America in areas above 20 North. This change in sea surface temperature impacts air currents in

W E S T E R L I E S

Westerlies are planetary winds that blow from west to east between 30 to 60 latitude. Western disturbances which hit India come with the Westerlies

Jet streams

Jet streams are narrow bands of strong wind flowing in the upper troposphere. They impact western disturbances which are present in the mid-troposphere and can amplify their impact

Arctic warming

The jet streams in the northern hemisphere are maintained due to the heat difference between the cool Arctic and warm equator. But heating up of the Arctic in the past 20 years has weakened the jet streams. The changes in jet stream patterns have also impacted western disturbances

Heating of the Tibetan plateau

Pronounced warming over the Tibetan Plateau in recent decades has increased the instability of westerly winds and this has increased the variability of the western disturbances

Easterly waves

Usually western disturbances cause rain in northern states of India. But due to the confluence of Westerlies and the moisture-laden easterly wave from the Bay of Bengal, states such as Maharashtra and Madhya Pradesh also received rain this year

Western disturbances

Western disturbances are low-pressure areas which originate in the Mediterranean region and reach India after travelling through Iran, Iraq, Afghanistan and Pakistan. The Himalayas break their journey and make them bring rain in north India

Is this climate change?



- Cannot say if this season of despair is linked to climate change
- But **cannot say** that these extreme weather events **are not** climate change
- **Weird is now normal**
- **Normal is now devastating** – the poor not responsible for climate change are worst impacted

Negotiations on **economy** Not ecology



Climate change is about **economic growth**

No country has built a low carbon economy

So action is little and too late

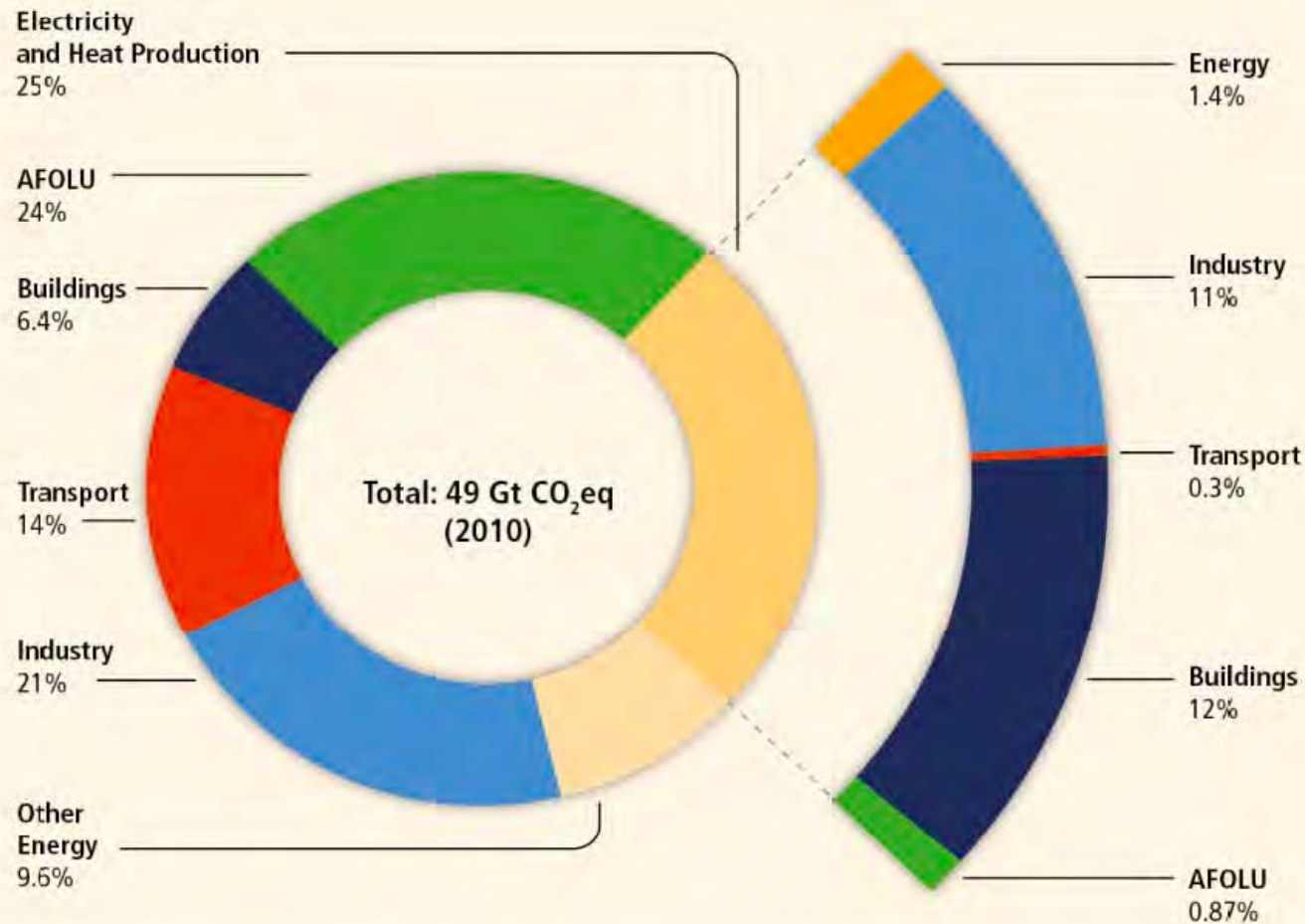
Convention signed in 1992

25 years later world is still talking;

procrastinating; **finding excuses not to act**

Economic growth on line

Emissions are about economy



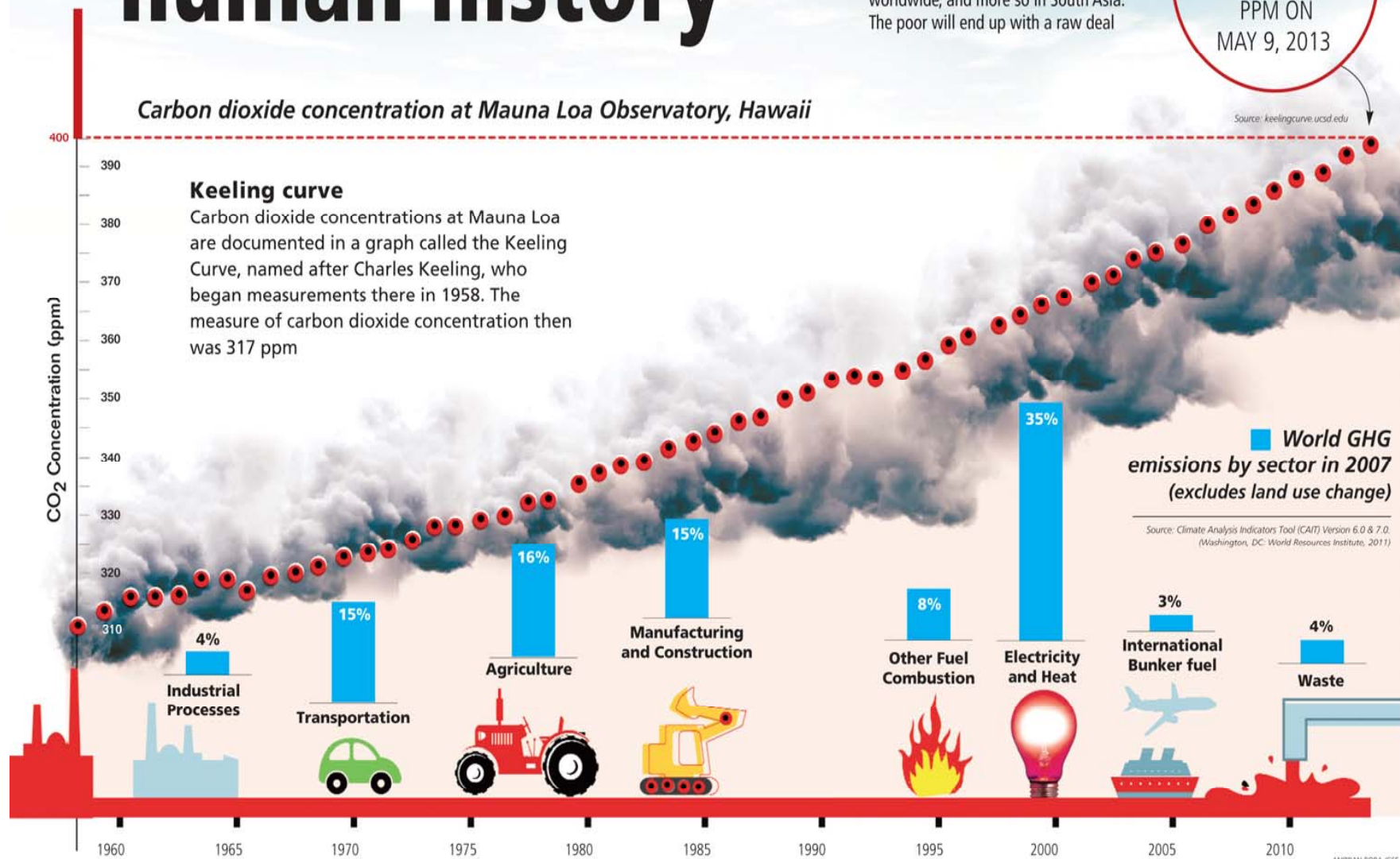
A first in human history

Carbon dioxide levels have crossed 400 ppm. This means the impacts of climate change will be even more pronounced—droughts, floods and sea level rise, for instance. If the world does not act to limit carbon dioxide emissions, climate change will cause devastation worldwide, and more so in South Asia. The poor will end up with a raw deal

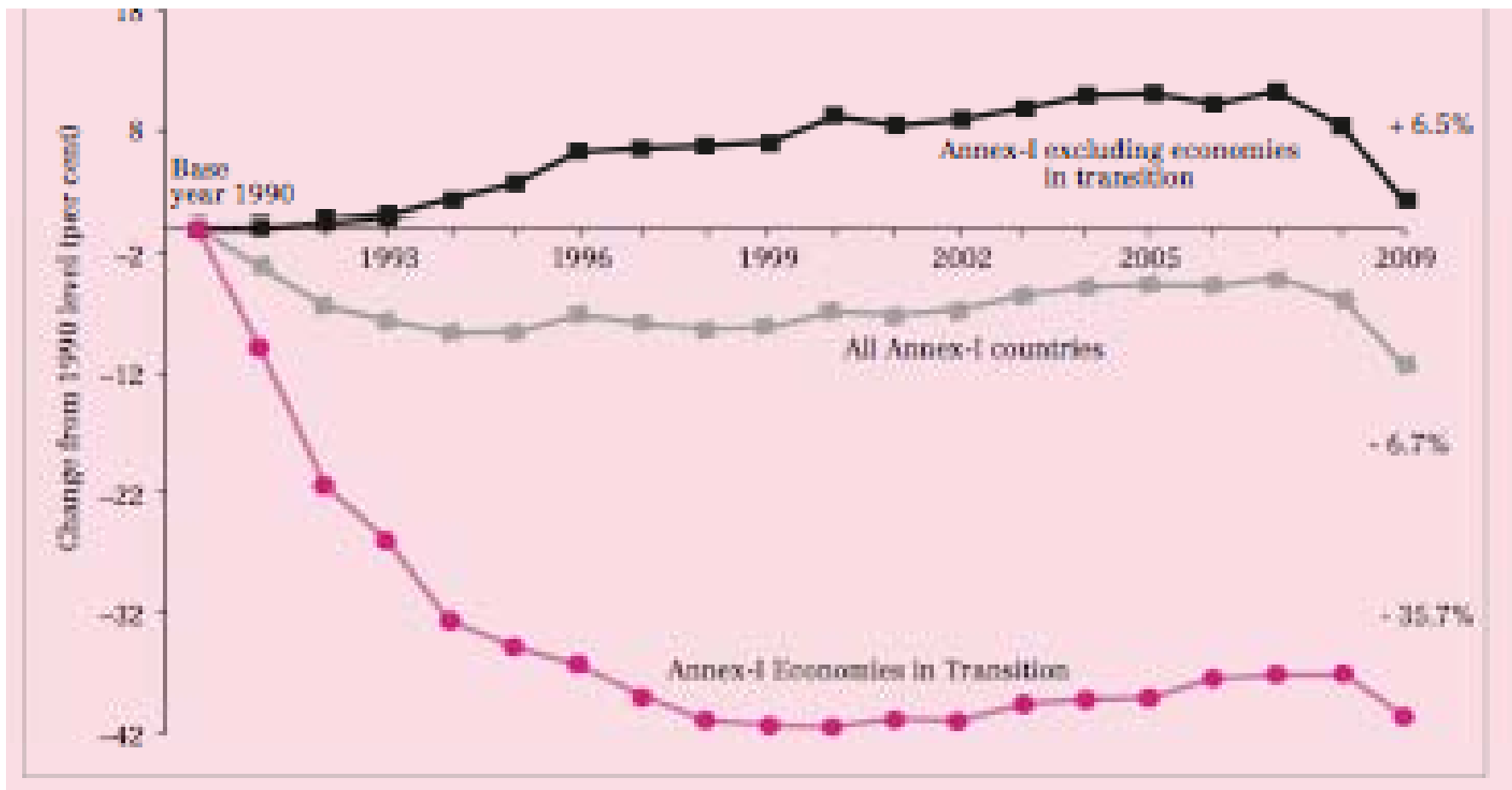
BREACHES
400
PPM ON
MAY 9, 2013

Carbon dioxide concentration at Mauna Loa Observatory, Hawaii

Source: keelingcurve.ucsd.edu



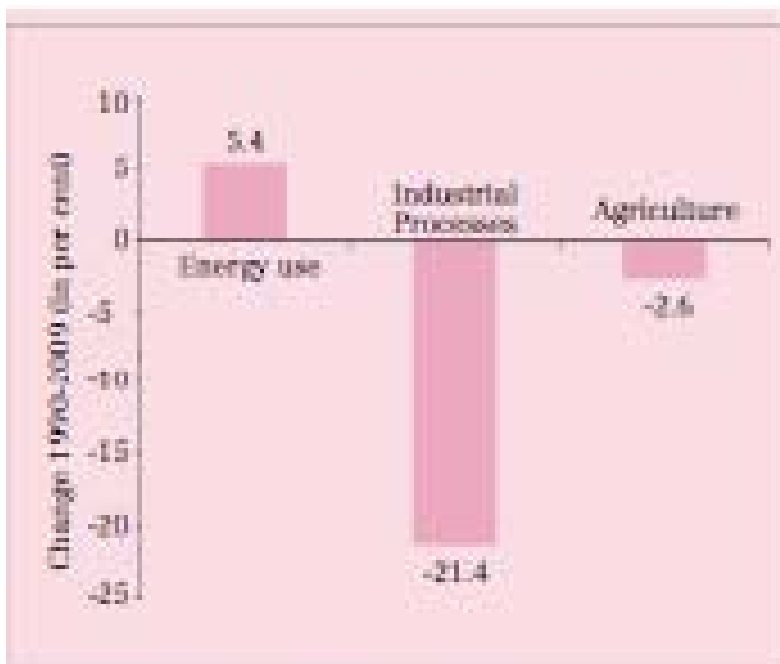
Rich countries: not meeting Kyoto target



1990-2009: no transition in energy use

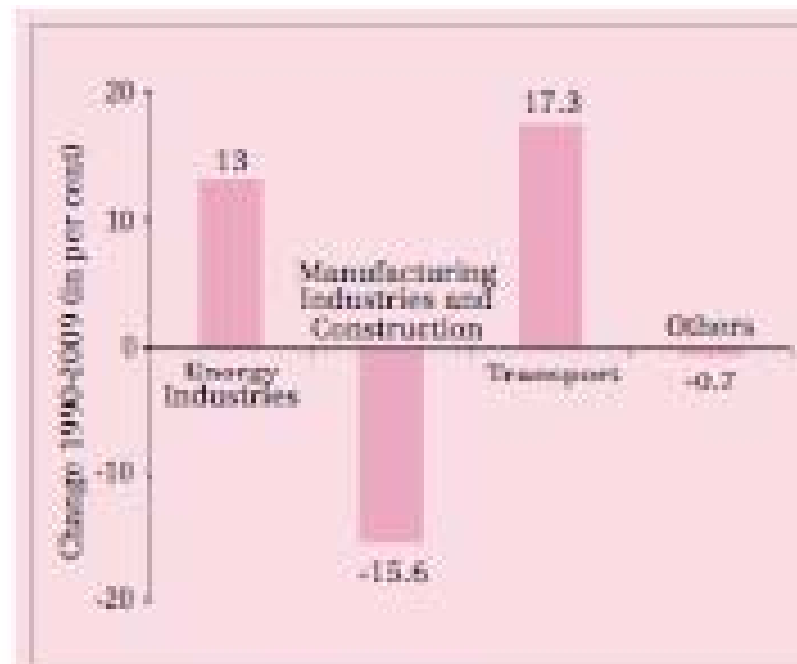


Energy emissions **up**; within energy, industry and transport **up**



Note: Excludes land use change and forestry

Source: GHG data from United Nations Framework Convention on Climate Change, 2011



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Growth has to be **reinvented**

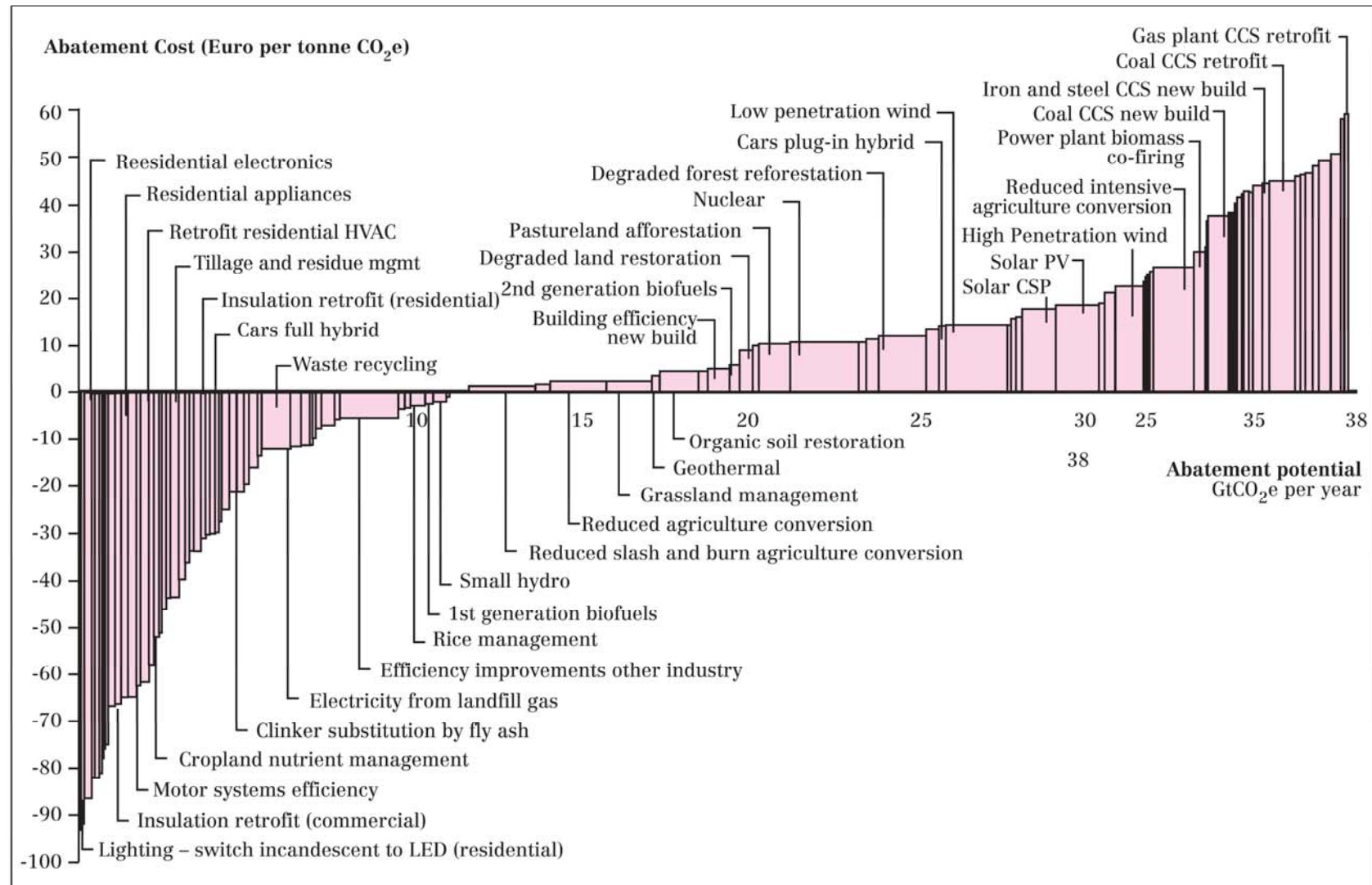


- Drastic reduction requires transformation
- Energy basket to be changed – from fossil to non-fossil
- Consumption to be reduced drastically
- As yet, world talks about low-carbon growth but has not found answers

Soft options used Needed is transformation



Figure 1: McKinsey's global GHG abatement cost curve



Growth has to be **shared**



Climate change is about **sharing** growth between nations and between people

The rich must reduce so that the poor can grow. Create ecological space

Cannot freeze inequity

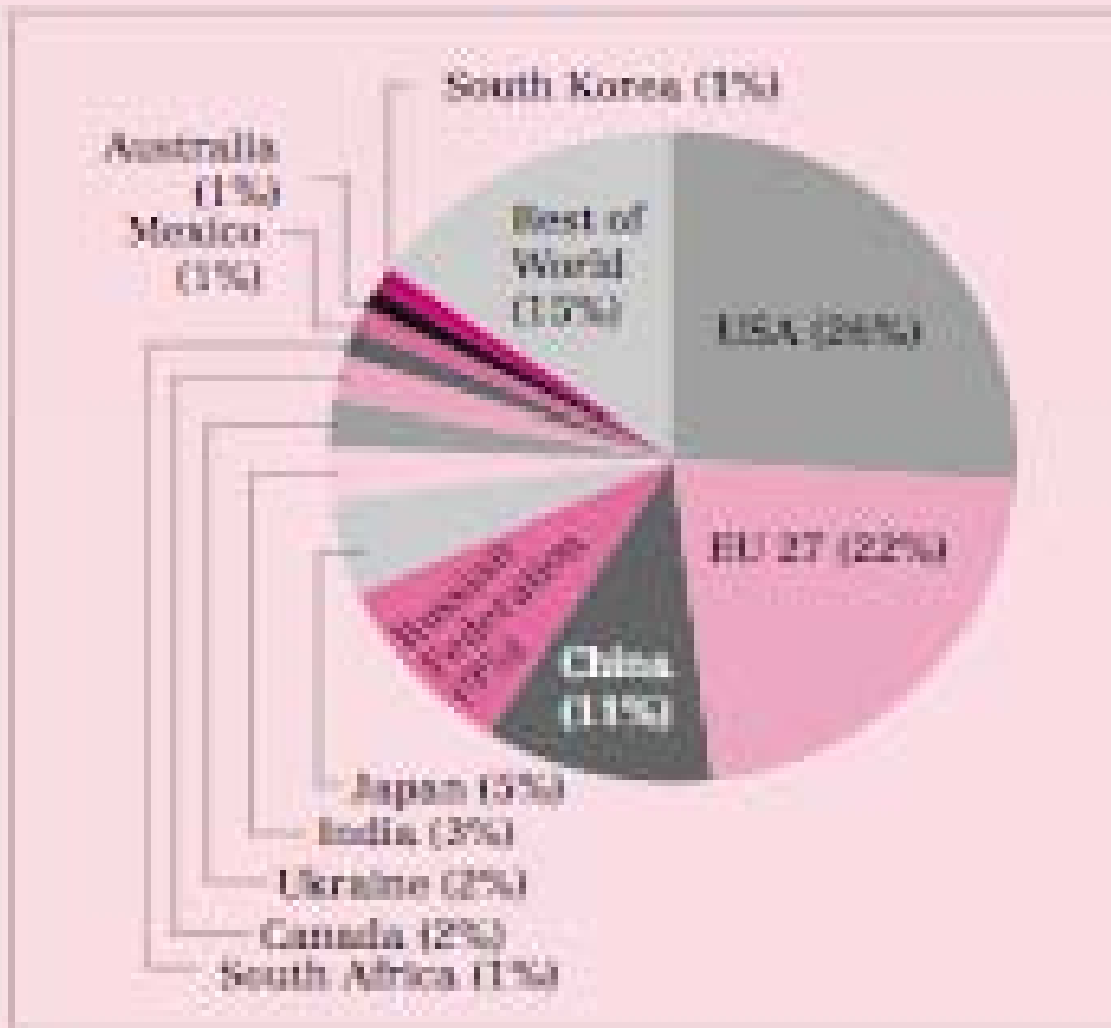
Stock and flow

Historical and current



- Carbon dioxide stays in the atmosphere – 70-100 years
- **Historical emissions:** A tonne of CO₂ emitted in 1850 same value as tonne of CO₂ emitted in 2005
- Burden is about past, present and future

Graph 2: Cumulative CO2 emissions, 1950-2007, without land use



Source: Climate Analysis Indicators Tool (CAIT) Version 8.0. (Washington, DC: World Resources Institute, 2011)

Add up
and
then
count

Cumulative
Emissions
of few



Present scenario

1 US citizen =

107 Bangladeshis

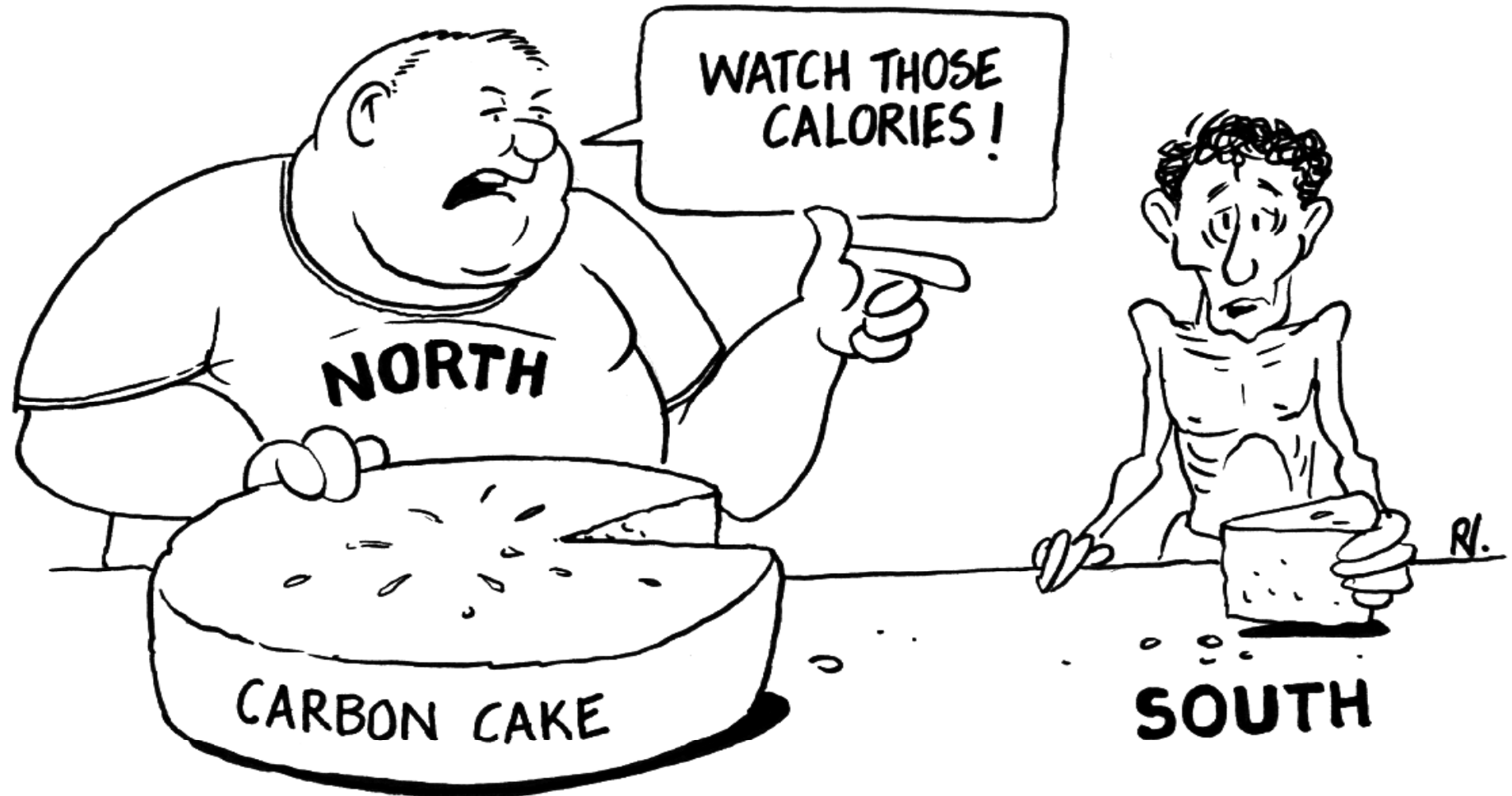
134 Bhutanese

19 Indians

269 Nepalese

Unacceptable. Need to secure ecological space for growth

Acceptable???



Procrastination no option



- In our interest to get an **effective deal**
 - But also imperative that deal is based on **principles of equity**
 - Our right to development secured
-
- How? **Possible?**

Agreement in 1992: built on science and good politics



- UN Framework Convention on Climate Change 1992 is based on the principle that a group of countries (Annex 1) created problem; have to reduce emissions first; create space for the rest to grow
- Common but differentiated Responsibilities

Principles are politics



Principles:

- Rights to the global common
- Historical responsibility of some
- Right to development
- Responsibilities of rest to act based on finance and technology access

Inconvenient truth

1992-2015:

Rio-Peru: world has changed



- 1992 Annex 1 countries = 70 per cent of annual emissions
- 2012 Annex 1 countries = 43 per cent of annual emissions
- **Rich did not reduce**
- **But rest grew to take up space**
- **Now run out of space**

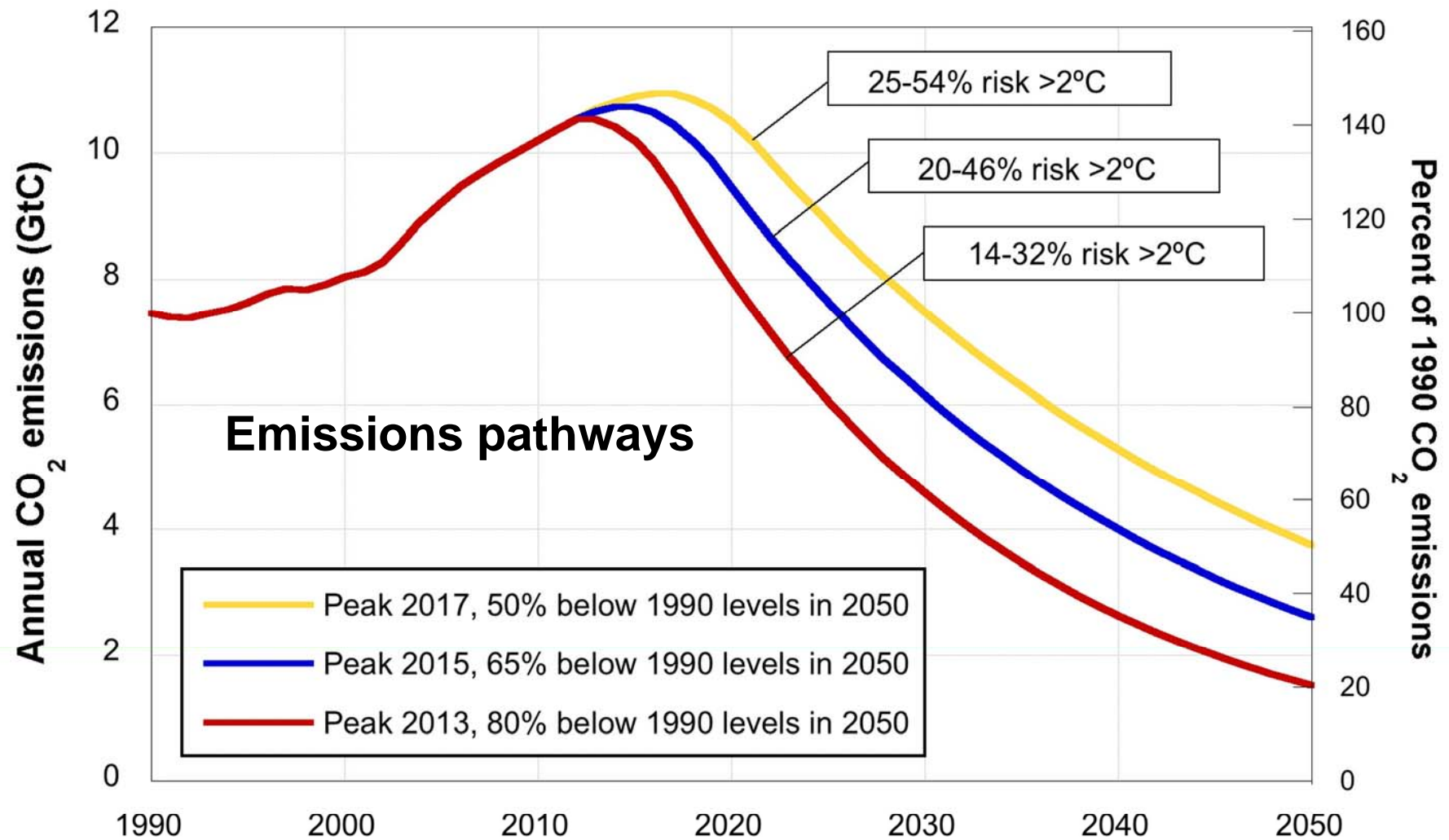
How to share the past, present and future?



- That is the question
- Developed countries say historical emissions is past, cannot be counted
- Now must talk about what is left to meet 2 degree target
- All must contribute

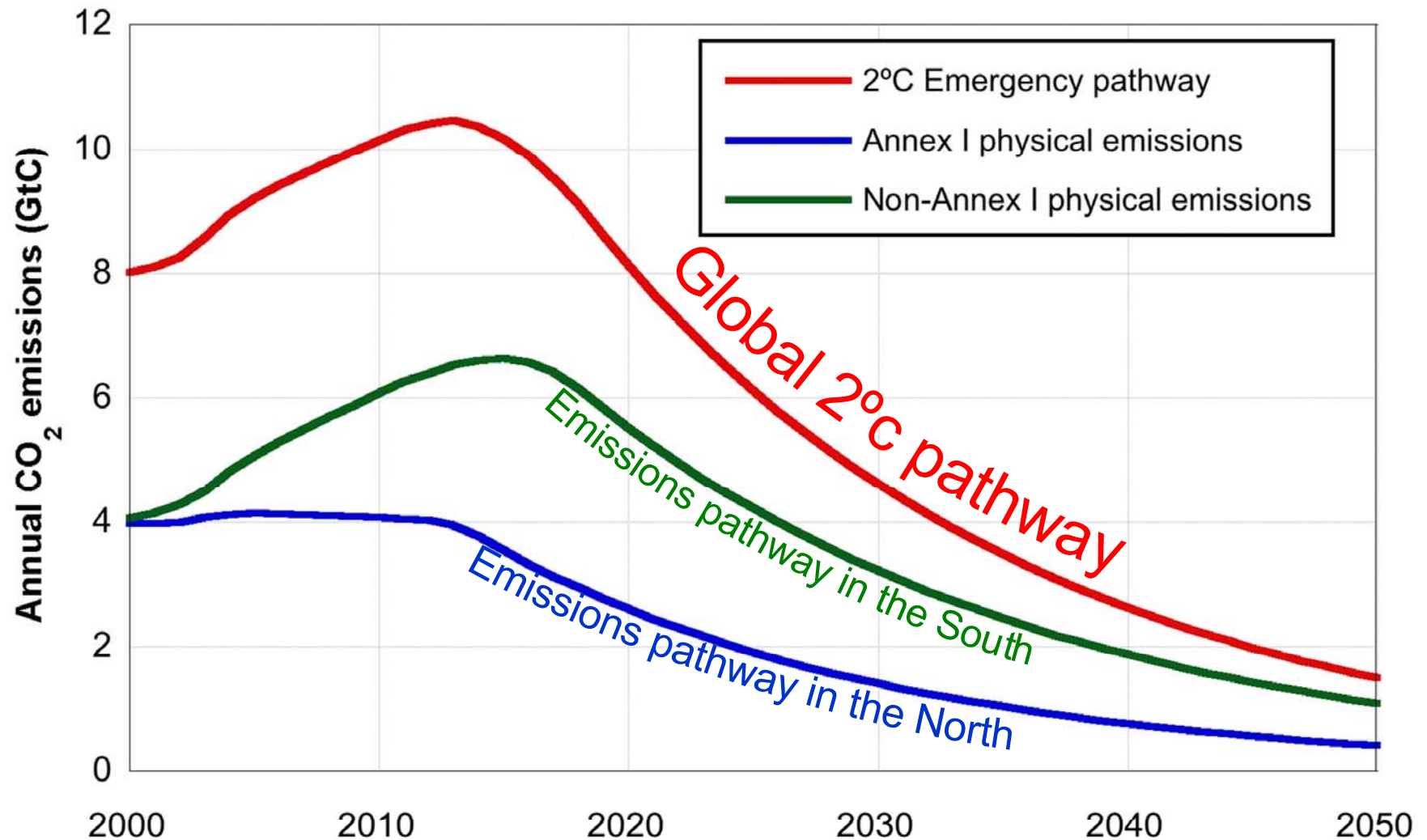


How to remain within the budget?





How to divide the budget?



What kind of climate regime can enable this to happen...?



Tough negotiations ahead

- World is getting warmer
- Impacts are beginning to show
- Rich did not reduce as committed
- Poor are increasing emissions
- Space has been occupied – historical
- Remaining carbon space is limited
- Funds and technology transfer remain empty promise



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- **Maneuvering space limited**
 - **But no option but to deal**

Peru-Paris: what will happen?



- Durban 2011 agreed
- New deal by 2015 (Paris) to avoid 2 degree rise in temp above pre-industrial era. Implement by 2020
- Gigatonne Gap before 2020 to be filled
- Funds would be provided – Green Climate Fund set up
- **BUT**

All or some or all and different



- Durban agreement: new deal will be “**applicable to all**”
- Fight over what this means?
- **Actions**: say developing countries
- **Commitments**: say developed countries
- Final consensus
- Intended **Nationally Determined Contributions (INDC)**



Equity re-defined

- **All** countries will put on the table their INDC
- What they can do and by when
- It is voluntary
- **They decide so it is equitable**
- Will it add up?
- Will it keep world below 2° C?

Add up and dance: equity reference framework



- By March-September 2015 countries will submit INDC
- These will be ‘added’ to see how the world is above or below its target to reduce
- Then games will begin
- All countries are expected to increase their bids once numbers don’t add up
- This is when things get **hot**



How not to add up?

- China-US deal
- Agree to equalize emissions – equity redefined
- China goes up to 12-13 tonnes per capita (from 8 tpc); US down to 12-13 from current 17 tonnes
- Both agree to take equal share of atmospheric space

Operationalize equity



Have to put forward principles on how the world must operationalize equity

Agree to take INDC, but insist that these are measured against past and future contributions.

Make equity the yardstick to determine INDC

Equity is pre-requisite



Is about **cooperation**. If the rich emitted yesterday, the emerging rich world will do today and tomorrow

Cooperation demands equity and fairness

Effective action only possible with equity

Between now and 2020

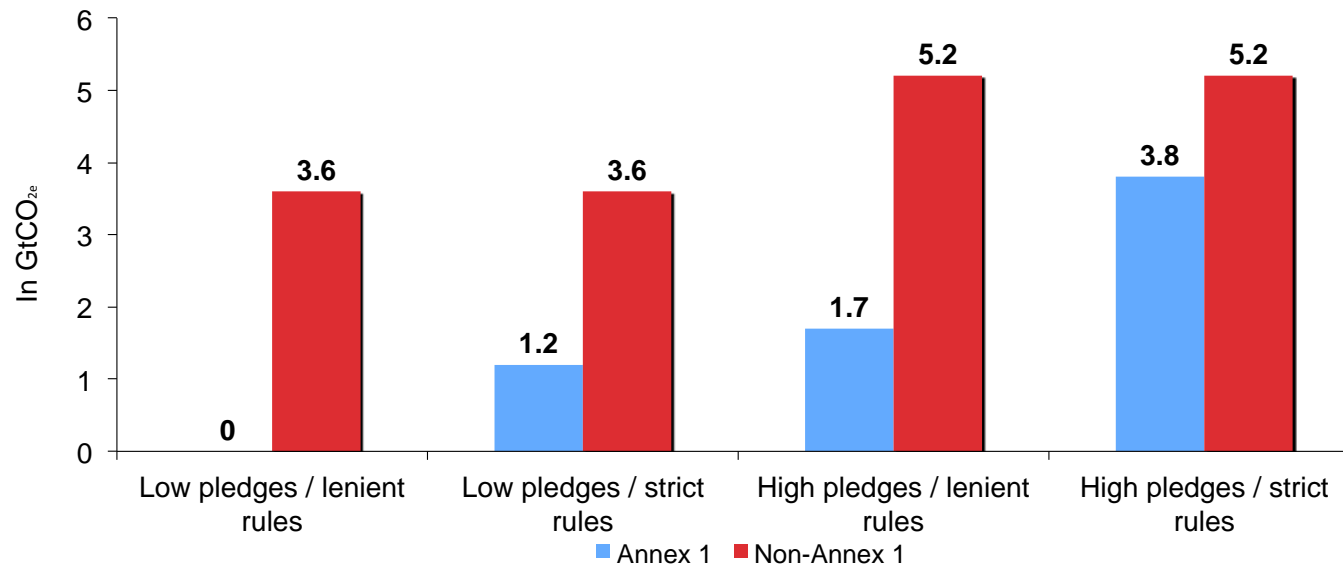


- There is a gap between what countries have agreed to do and what should be done to keep world below 2° C
- **How to fill?**
- US has pledged **17%** below **2005** level (roughly 0-3% below 1990 level)
- Already developing countries doing more than their share



Shifts the burden of transition

- SEI assessment of UNEP report on 'emission gap' makes clear **'gap is growing'** – between rich and poor



Short-lived gases or action?



- Rich countries want action on gases that are short lived – get rid of these and get quick relief
- **HFC** – refrigerant/air conditioner coolant
- **Black carbon** – from incomplete combustion of diesel cars and cookstoves
- **Methane** – from rice paddy, livestock and oil and gas (shale gas)

Funds not coming



- Green Climate Fund: \$100 billion by 2020
- **Empty**
- Adaptation Fund: From CDM proceeds
- **Empty**
- Fight is to delink INDC from financial commitment

Loss and Damage



- Most vulnerable nations have said that adaptation will not be enough
- Need to account for loss, pay for damage
- But 'lost' fight as this mechanism is now under the adaptation framework
- Rich countries do not want to discuss liability or compensation

REDD+



- Cheapest option to reduce emissions is to landuse – in developing world
- Protect forest
- Grow forest
- Agreement on REDD+
- But funds tied to Green Climate Fund
- National entity agreed so rights of forest dwellers national responsibility

REDD+ whose account



- Brazil has said that REDD+ should not be linked to market instrument
- Rich countries (and India) would like to sell forest as 'offset' to rich countries
- **Should not happen** – countries should account for forest protection and payments to local communities in their accounts

CSE proposal

Right to **development**



- Will involve all countries
- All will live within limits set by the planet
- Emission cuts will be based on science; ambition to cut drastically to stay within **at least 2° C**
- **Limits will be for all**; based on equitable sharing of common atmospheric space

New deal



World running out of space and time

- Must raise ambition
- Must create framework for all to reduce; based on limits for all

Need deal based on equity and fairness

No effective global deal without equity

- Will not derail process; will strengthen it

Climate change **real**



- Action urgent
- Ambition necessary
- Take national action
- But demand global action to match scale, pace of climate change and contribution to creating the problem