



Antropocene,

cambiamenti climatici,
transizione energetica:
scenari per il nostro futuro

Luca Mercalli

Società Meteorologica Italiana

www.nimbus.it

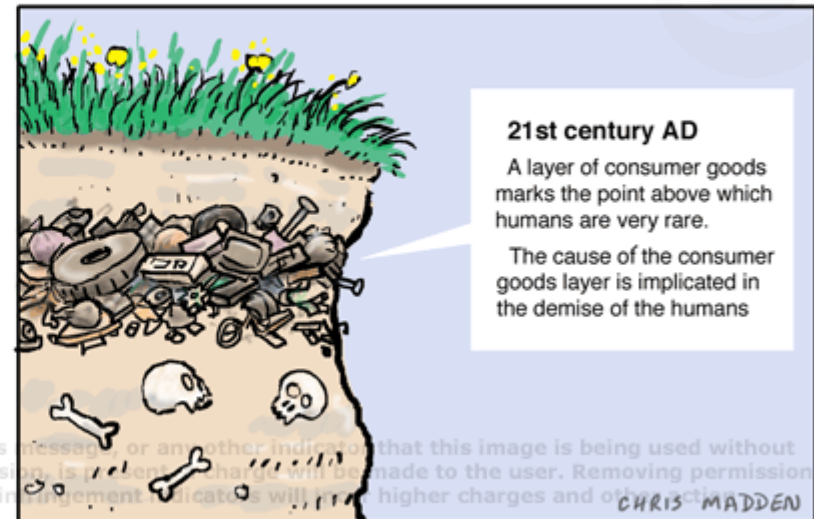
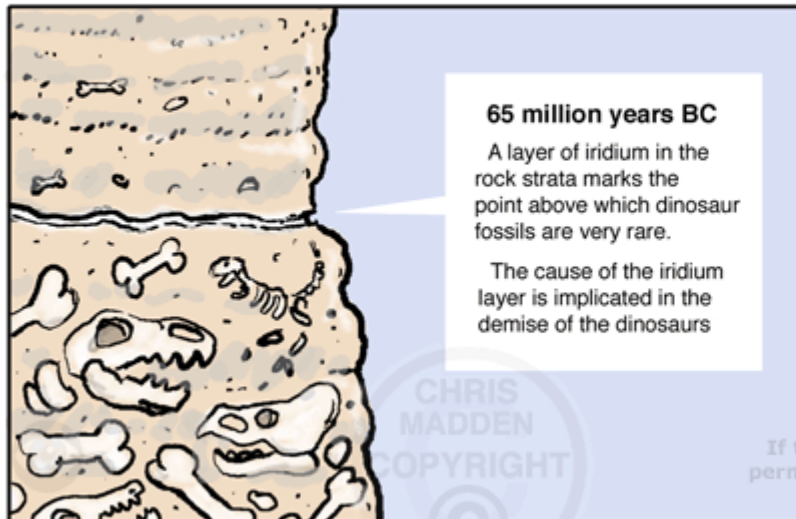
ANTHROPOCENE

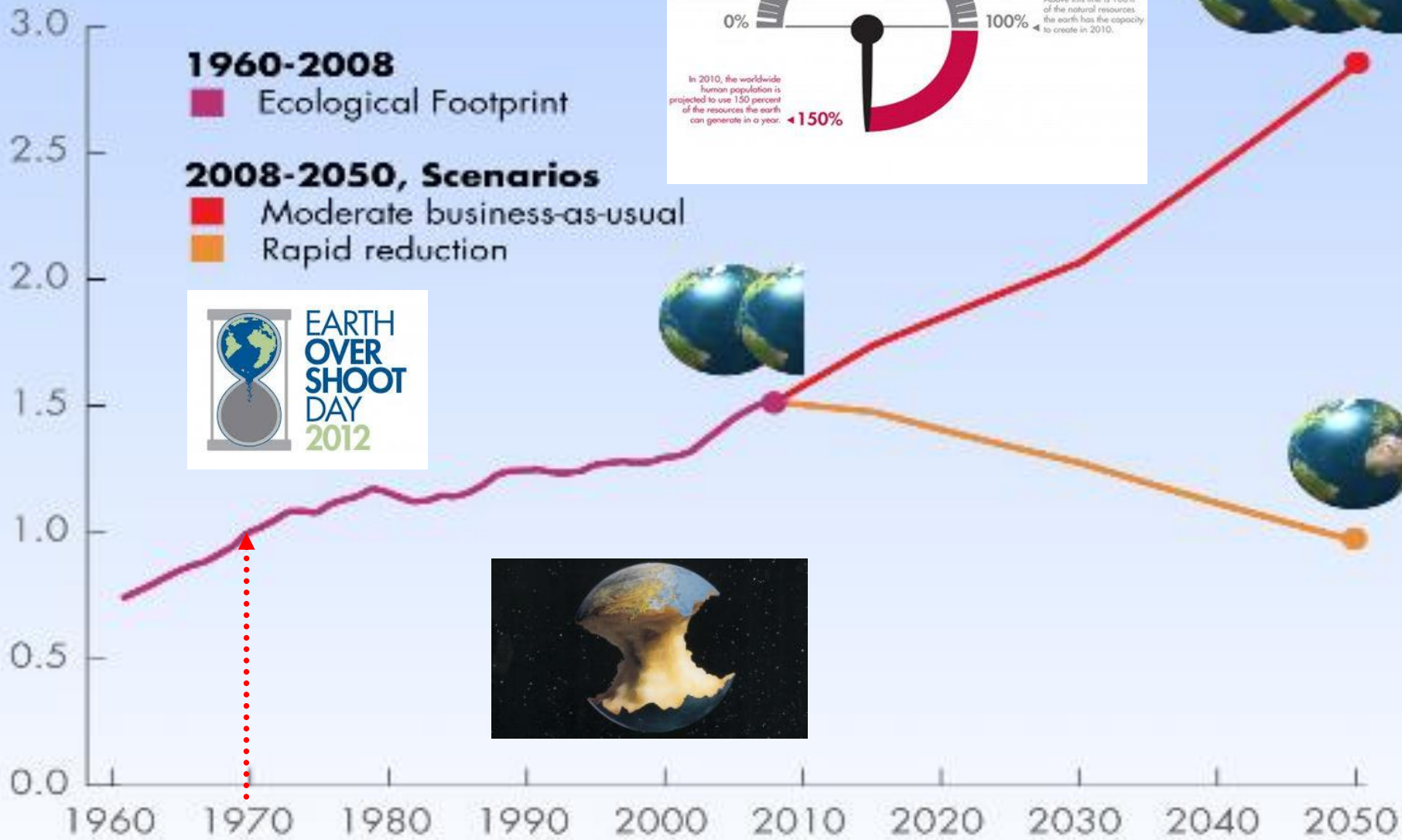
approx. 1945 A.D. - present



A new geologic era with no precise start date. Marked by significant human impact on climate and ecosystems. Coined by Paul Crutzen. Rise of agriculture. Deforestation. Cement. Combustion of fossil fuels. Coal, oil and gas roused from the earth. Extraction and emission. Operation Crossroads vaporizes 70 acres of Bikini Atoll. Deep geologic repositories. Pacific Trash Vortex, a swirling gyre of marine litter and plastic. 6.7 billion humans + growing. Palo Verde Nuclear Power Plant. Hull-Rust-Mahoning open pit mine. Three Gorges Dam. Fresh Kills Landfill. Las Vegas. Dubai.

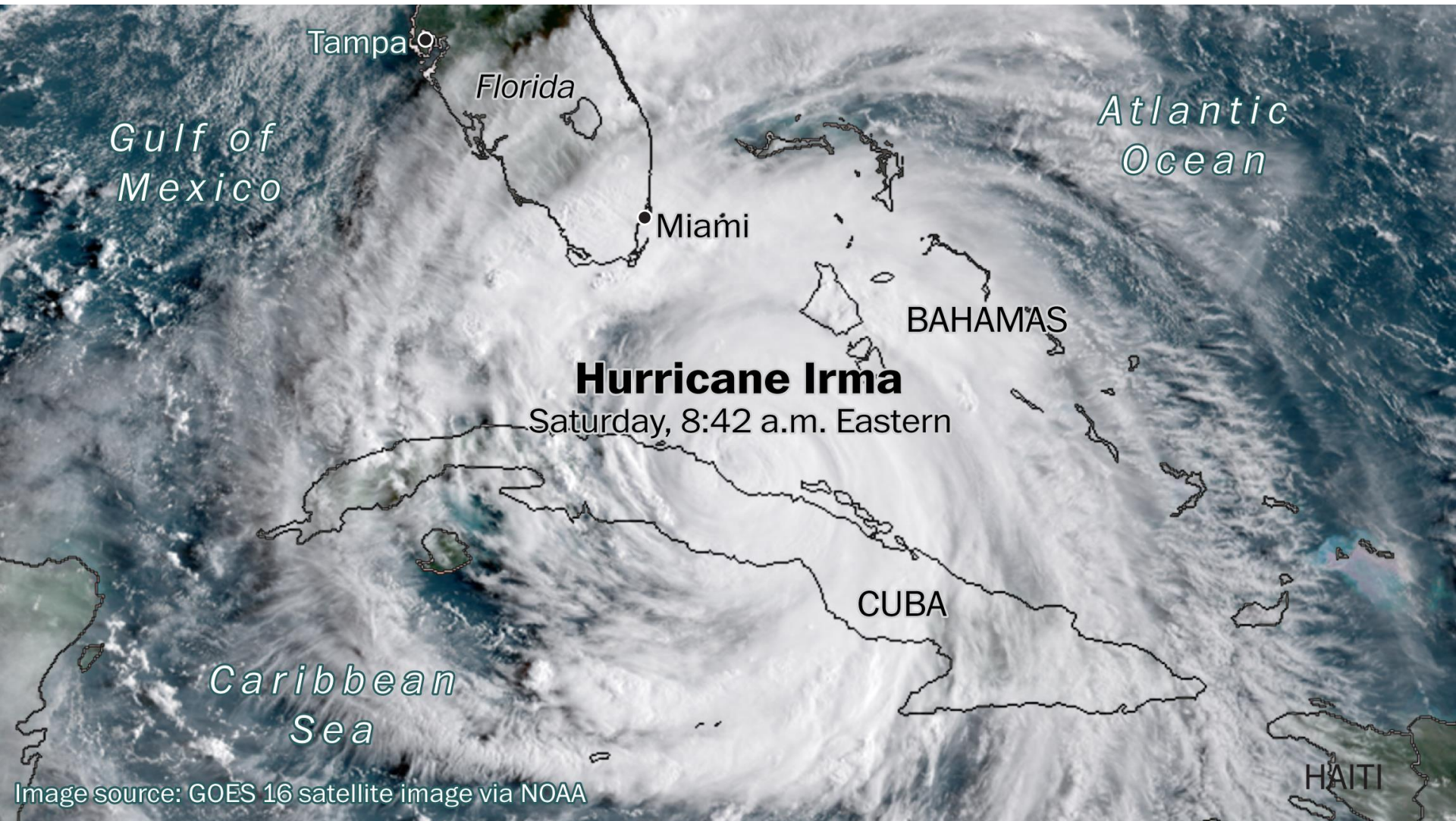
LESSONS FROM THE FOSSIL RECORD





y-axis: number of planet earths, x-axis: years

Cambiamenti climatici



Uragano Irma, 09 settembre 2017

www.ipcc.ch 1988

UNFCCC Rio 1992

Kyoto 1997-2005-2012

Paris COP21 2015



The screenshot shows the IPCC website homepage. At the top, it features the WMO and UNEP logos and the text "INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE". Below this is a navigation menu with links for "Home", "About IPCC", "Meetings and Documentation", "IPCC Reports", "Graphics, Presentations & Speeches", "Information for the press", "IPCC Glossary", and "Links". The main content area includes a news section with the headline "At its 29th Session the IPCC re-elected Dr. Pachauri Chair of IPCC and it elected a new IPCC Bureau and Task Force Bureau". A large banner for "20 years IPCC" is dated "31st August 2008". There are also sections for "IPCC Technical Paper on Climate Change and Water" and "IPCC 20th Plenary Session & IPCC 20th Anniversary".

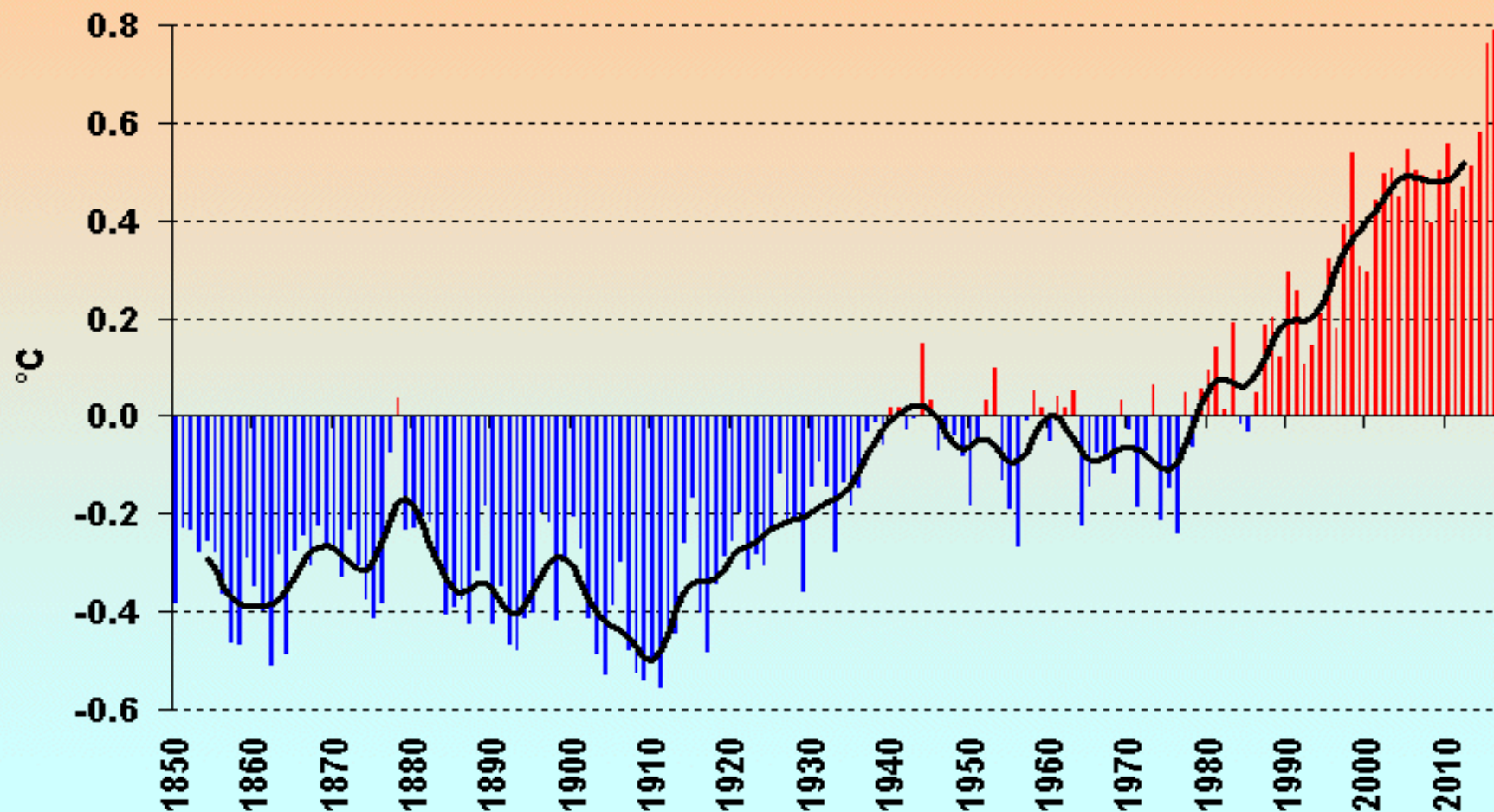


AR5 2013-14
Quinto rapporto
sul clima
globale: se ne è
parlato troppo
poco!

ipcc
INTERGOVERNMENTAL PANEL ON
climate change



Anomalie termiche globali 1850-2016
(rispetto a media trentennio 1961-90)
serie MetOffice - Hadley Center



2014-15-16: ogni anno, nuovo record globale di caldo,
impressionante accelerazione del riscaldamento

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

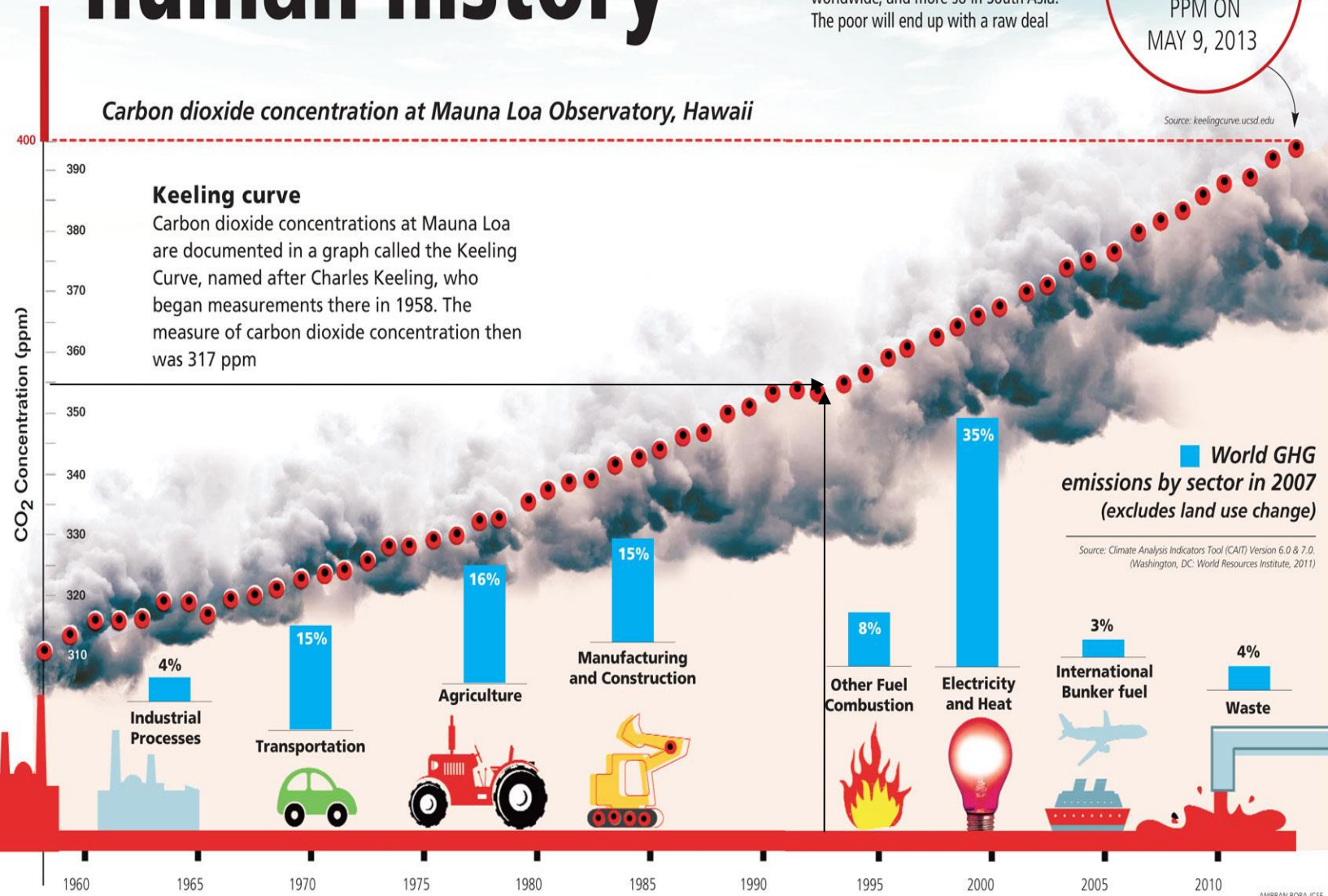
BREACHES
400
PPM ON
MAY 9, 2013

Source: keelingcurve.ucsd.edu

Carbon dioxide concentration at Mauna Loa Observatory, Hawaii

Keeling curve

Carbon dioxide concentrations at Mauna Loa are documented in a graph called the Keeling Curve, named after Charles Keeling, who began measurements there in 1958. The measure of carbon dioxide concentration then was 317 ppm



- For the past several years, CO₂ concentrations have hovered close to 390 ppm. The 400 ppm daily average is a first in human history
- In the last 50 ppm increase, the Arctic melted. Imagine what another 50 ppm increase will do
- Diversity of even common species found in most parts of the world will be badly hit. Animal species in particular may decline more as a result of loss of food from plants
- Some environmentalists are of the view that to return to the 350 ppm level, use of conventional energy sources has to be re-examined. But this is easier said than done. Any alternative measure will require finance and technological assistance from industrialised countries to developing countries. Even though institutions for financial transfer exist under UNFCCC, there is no money and the industrialised world has not provided exclusive climate finance to developing countries yet

LIVELLO CO₂ NEL TEMPO

