

LAUDATO SI, PARIS AND THE CLIMATE PROBLEM

SEVEN STEPS TO THE PAPAL ENCYCLICAL

Sustainable Development in the context of Laudato Si' Encyclical

Sejm of the Republic of Poland

Prof. Dr. Ottmar Edenhofer

Warsaw, 15 Oktober 2016



STEP ONE

No “Climate Encyclical”

The encyclical discusses CLIMATE CHANGE, POVERTY and INEQUALITY as the main ethical challenges of the 21st century. It is therefore inappropriate to reduce it to an environmental or climate encyclical.

The encyclical is fundamentally on JUSTICE.

The Background of the Encyclical



June 2015
G7 SUMMIT
Germany

Sept. 2015
Francis
visits USA

Sept. 2015
UN summit
SDGs

Nov. / Dec.
2015
COP 21
Paris

Pope John XXIII „Pacem in Terris”



The 1963 papal encyclical addresses „**all men of good will**” in a global crisis



THE BERLIN WALL



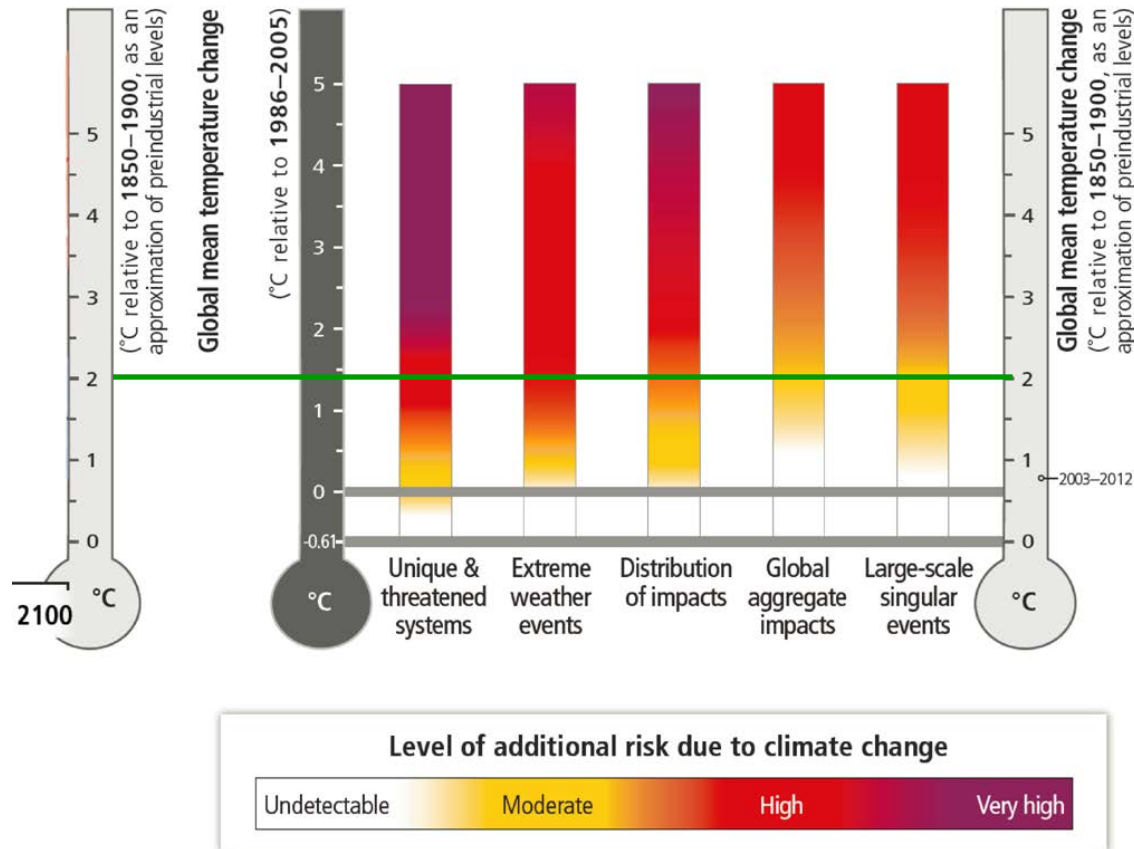
CUBA CRISIS

STEP TWO

The Global Commons Problem

The encyclical identifies the atmosphere as a GLOBAL COMMON GOOD, as the collective property of all humans.

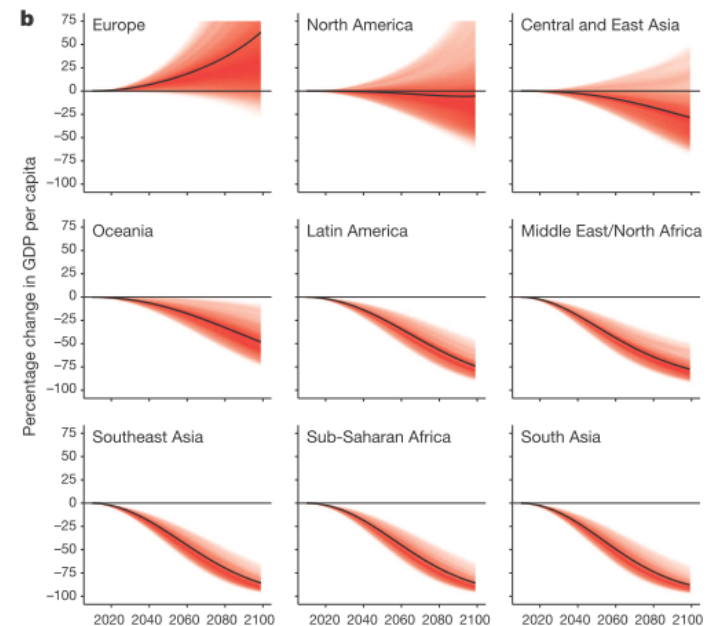
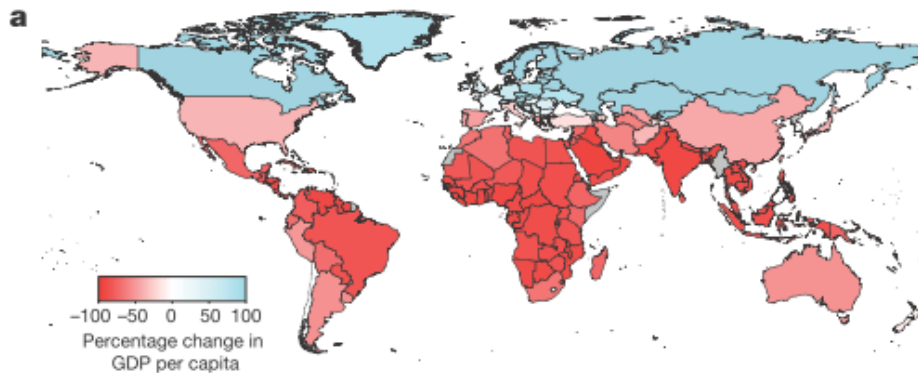
Climate Projections and Associated Risks



Based on SYR IPCC AR5; Slide by H. J. Schellnhuber

Global non-linear effect of temperature on economic production

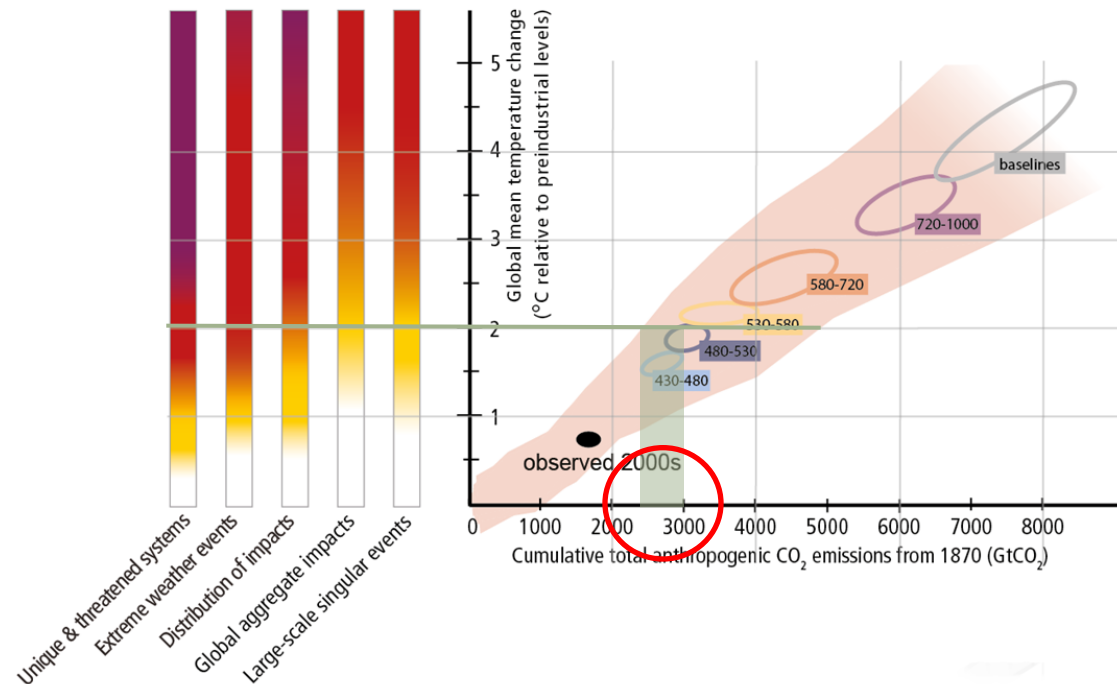
Marshall Burke^{1,2*}, Solomon M. Hsiang^{3,4*} & Edward Miguel^{1,5}



Source: Nature, doi:10.1038/nature15725

The Synthesis of IPCC

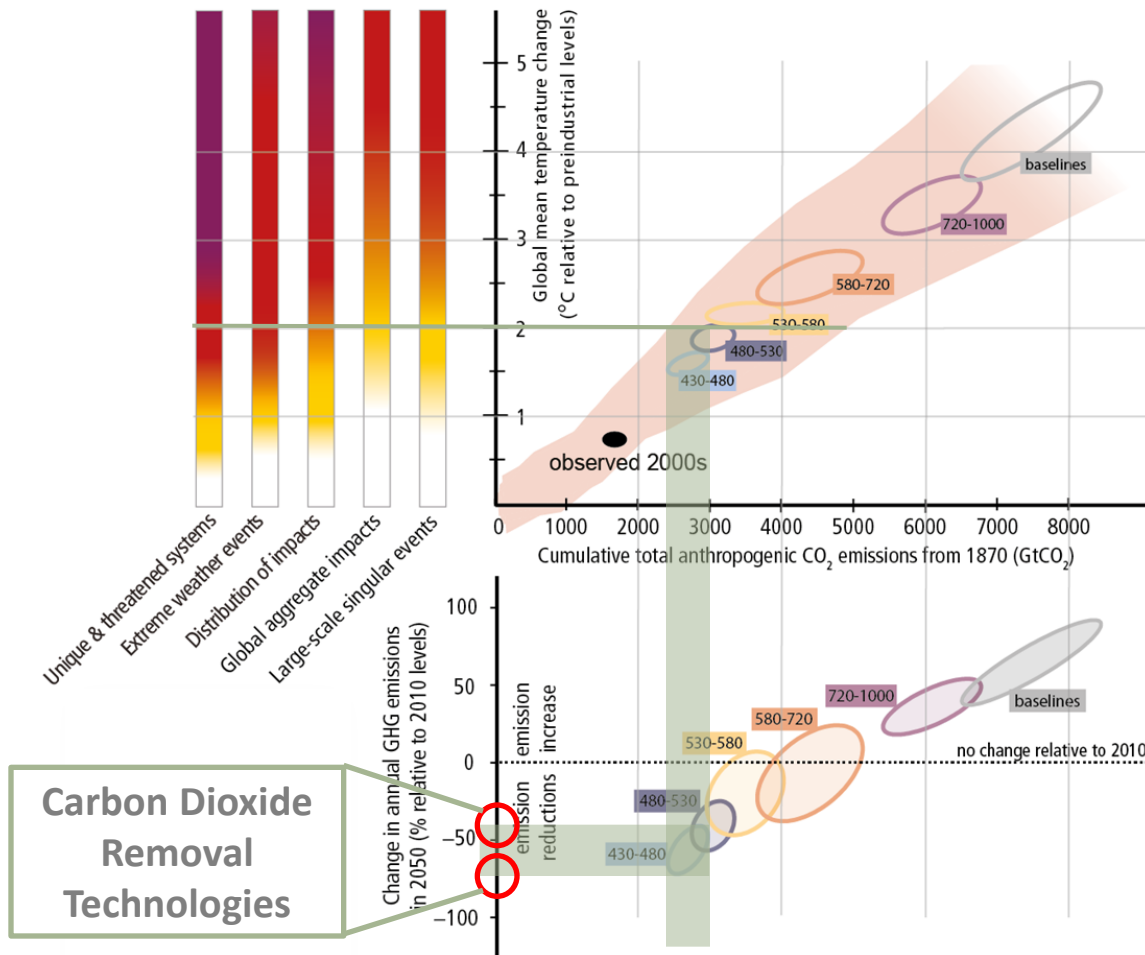
Risks from climate change depend on cumulative CO₂ emissions...



Based on SYR IPCC AR5 Figure SPM.10

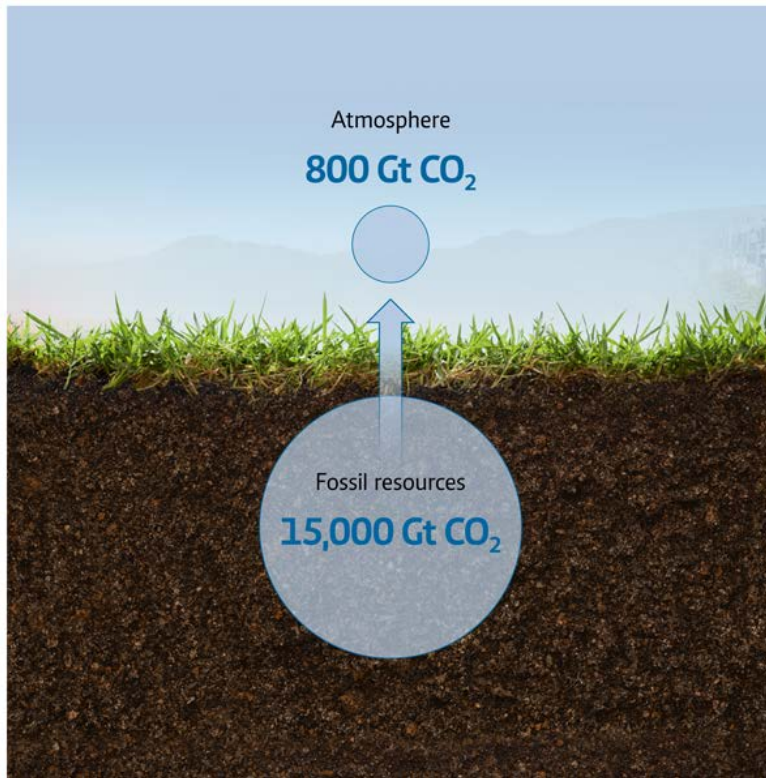
The Synthesis of IPCC

... which in turn depend on annual GHG emissions over the next decades.



Based on SYR IPCC AR5 Figure SPM.10

The climate problem at a glance.



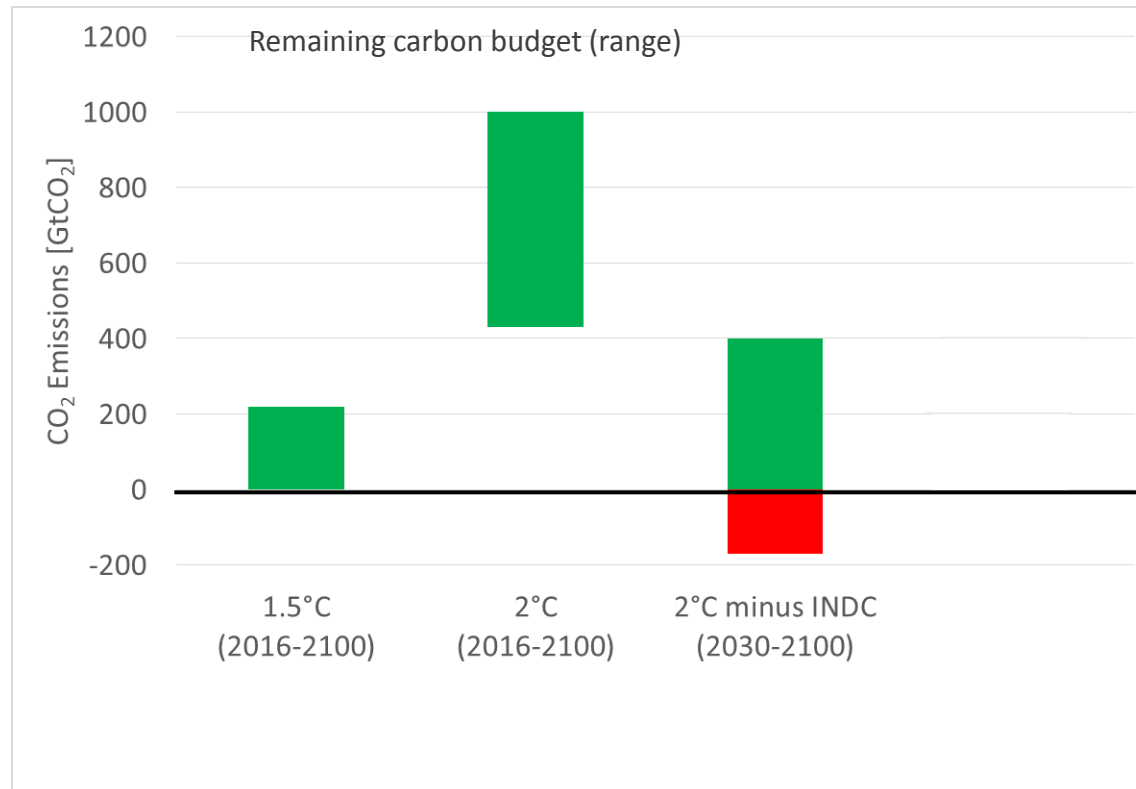
Resources and reserves to remain underground until 2100 (median values compared to BAU, AR5 Database)

Until 2100	With CCS [%]	No CCS [%]
Coal	70	89
Oil	35	63
Gas	32	64

Source: Bauer et al. (2014); Jakob, Hilaire (2015)

The Paris agreement: INDCs

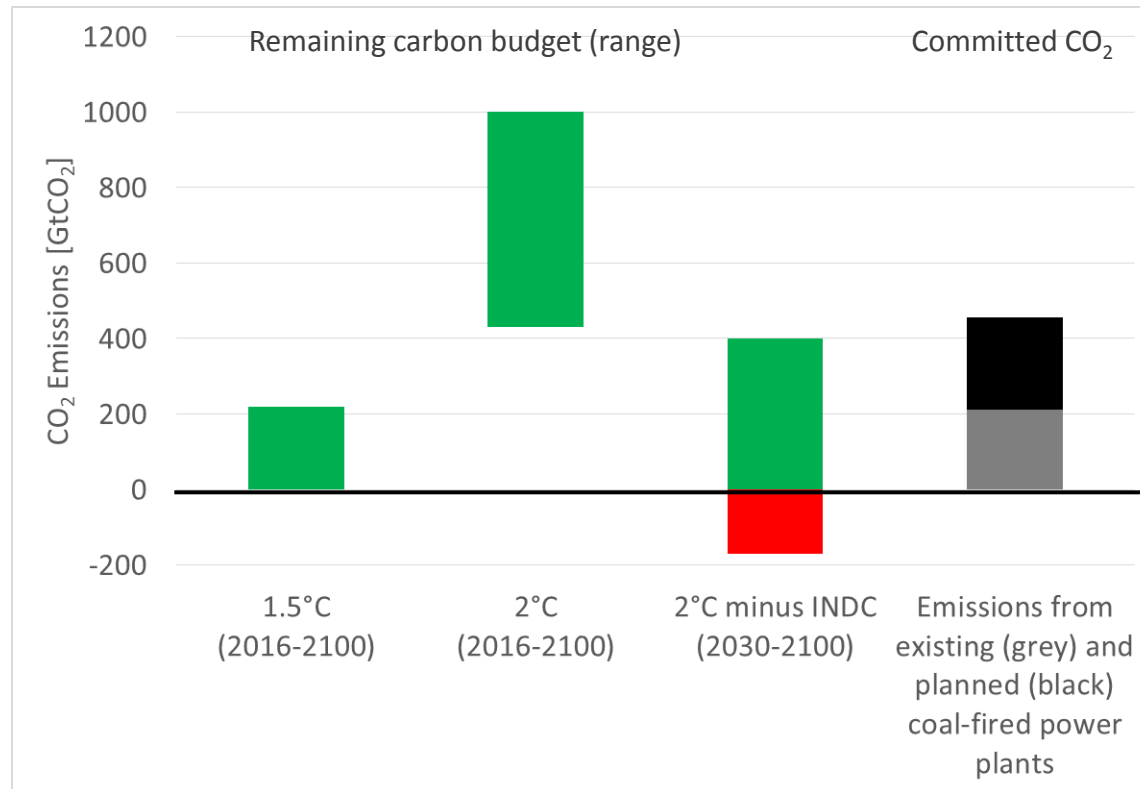
- Intended Nationally Determined Contributions are inconsistent with the temperature target.



Data sources: Le Quere et al. (2015), Rogelj et al. (2015), Luderer et al. (2015); Fig. adapted from Jan Minx 2016

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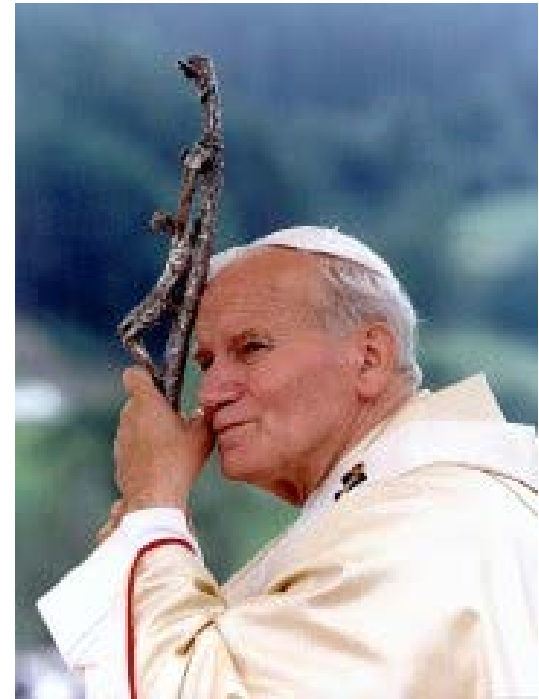


Data sources: Le Quere et al. (2015), Rogelj et al. (2015), Luderer et al. (2015); Fig. adapted from Jan Minx 2016

The Common Destination of Goods

“The principle of the **subordination** of **private property** to the **universal destination of goods**, and thus the right of everyone to their use, is a **golden rule of social conduct** and ‘the first principle of the whole ethical and social order’⁷¹”

71 John Paul II, encyclical letter *Laborem Exercens*,
in Pope Francis, encyclical letter *Laudato Si* [93]

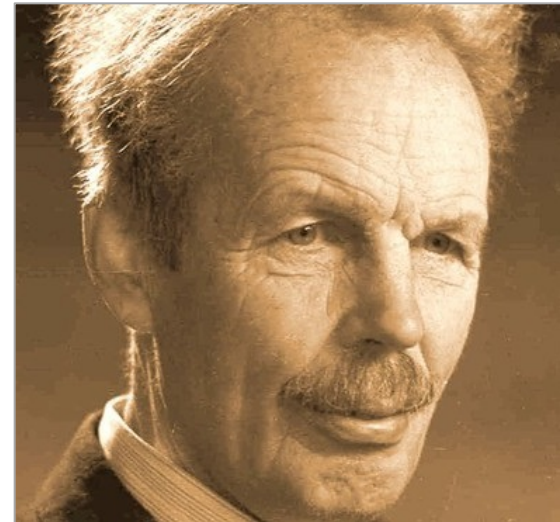


St. John Paul II
(1978-2005)

The Polluter Pay Principle and the Social Costs

“Yet only when ‘the economic and **social costs** of using up shared environmental resources are recognized with **transparency and fully borne** by those who incur them, not by other peoples or future generations’¹³⁸, can those actions be considered **ethical**.”

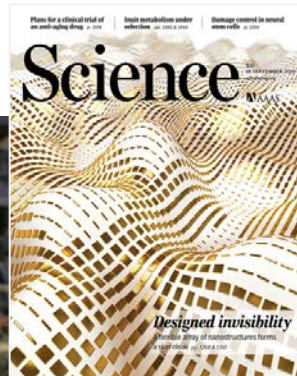
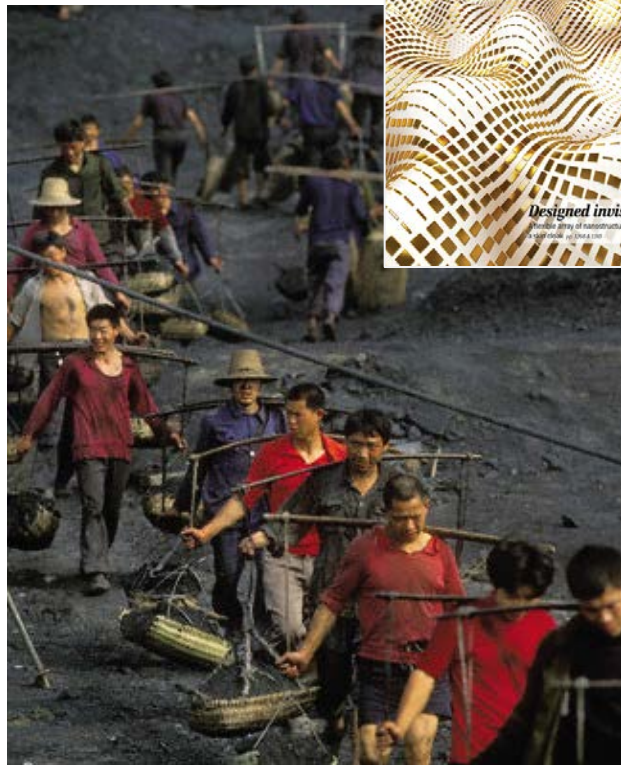
138 Pope Benedict XVI, encyclical letter *Caritas in Veritate*,
in Pope Francis, encyclical letter *Laudato Si* [195]



Arthur Cecil Pigou
(1877-1959)

Renaissance of Coal

Social costs vs subsidies



ENERGY

King Coal and the Queen of Subsidies

September 2015

The window for fossil fuel subsidy reform is closing fast

By Ottmar Edenhofer

Coal is the most important energy source for the Chinese economy (see the photo). Other rapidly growing economies in Asia and Africa also increasingly rely on coal to satisfy their growing appetite for energy. This renaissance of coal is expected to continue in the coming years (1) and is one of the reasons that global greenhouse gas (GHG) emissions are increasing despite the undisputed worldwide technological progress and expansion of

wide emissions are expected to continue to rise. After all, a reduction in coal demand in one region reduces world market prices, incentivizing an increasing demand in other regions (6).

What explains this renaissance of coal? The short answer is the relative price of coal. The price of coal-based electricity generation remains much lower than that of renewable power when the costs of renewable intermittency are taken into account.

As a result of technological progress and economies of scale, the costs of generating

“one ton of CO₂ receives, on average,
more than **150 US\$** in subsidies ”

Source: Science, 18. September 2015, Vol 349, Issue 6254, 1286ff

STEP THREE

The Pope rejects misleading moral dilemmas.

The Pope regards WATER SHORTAGES for the poor, the LOSS OF BIODIVERSITY, the COLLAPSE OF SOCIETIES, and the AGGRAVATION OF INEQUALITY as impacts of dangerous climate change.

Preferential Options for the Poor



WATER AVAILABILITY



SANITATION



TELECOMMUNICATION



ACCESS TO ELECTRICITY

STEP FOUR

The Common Good and Vested Interests

The encyclical exposes the denial of climate change as THE VEILING OF POWER INTERESTS.

Veiling, because the debate is not about scientific accuracy, but rather SELF-SERVING INTERESTS that are to be enforced against the common good.

STEP FIVE

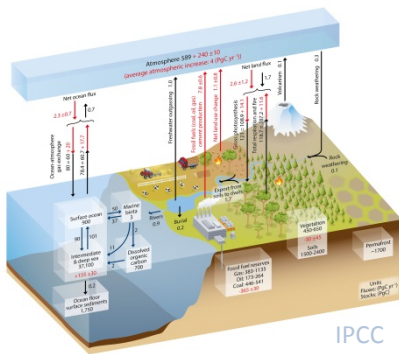
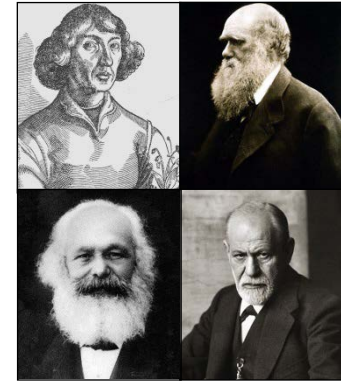
Technological Power and Responsibility

The encyclical assesses technology largely positively, but it warns of TECHNOLOGICAL DETERMINISM, TECHNOCRACY, CONSUMERISM and FATALISM.

The Anthropocene

...and the narcissistic humiliations of the modern age

Kopernikus, Darwin, Marx and Freud may have inflicted narcissistic humiliations on modern man.



But this humiliated human is now slowly learning that he is interfering with the bio-geo-chemical circuits with an **unprecedented velocity** and to an **unprecedented extent**.

→ But how can the causing be changed into an **increased responsibility**?

Ethical decisions about the direction of technological change

Technology needs ethical deliberation and design, especially energy supply.



STEP SIX

Call for Stewardship at all relevant levels

The encyclical places the solutions of the global crisis at the levels of INTERNATIONAL COOPERATION, NATIONAL POLICIES, MUNICIPAL GOVERNANCE, COMMUNITIES, FAMILIES and the INDIVIDUAL.

Laudato Si' does not ask for a world government.

Against market economy and economic growth?

- Pope Francis refers to **reason** and not to faith when presenting his concerns on ‘**carbon credits**’ and **emissions trading**; **he does not claim technical competence**.
- Thus, **technical evaluation** of policy instruments within the encyclical should **not be understood** as a new **doctrine in the social teaching** of the Catholic Church.
- It is an **invitation** and engagement in a reasoned **debate** over how to **derive prudential** rules from the more **fundamental ethical principles** discussed in the encyclical.
- Climate **policy instruments** need an **evaluation** according to **justice, fairness, effectiveness** and **efficiency**.

STEP SEVEN

Why Science needs Religion - Why Religion needs Science

The biblical narration of CREATION, FALL, SALVATION and CONSUMMATION is intended to open all Christians' eyes.

Human history is drama, not tragedy.



Source: Nature Climate Change 5,
907-909 (2015)

COMMENTARY:

Science and religion in dialogue over the global commons

Ottmar Edenhofer, Christian Flachsland and Brigitte Knopf

The Pope's encyclical makes unprecedented progress in developing scientific dialogue with religion by drawing on research, and encouraging further discussion about the ethical challenge of governing the global commons.

The encyclical has facilitated a **debate** outside the Church unprecedented in history.



<http://www.thinkingfaith.org/articles/laudato-si%E2%80%99concern-our-global-commons>



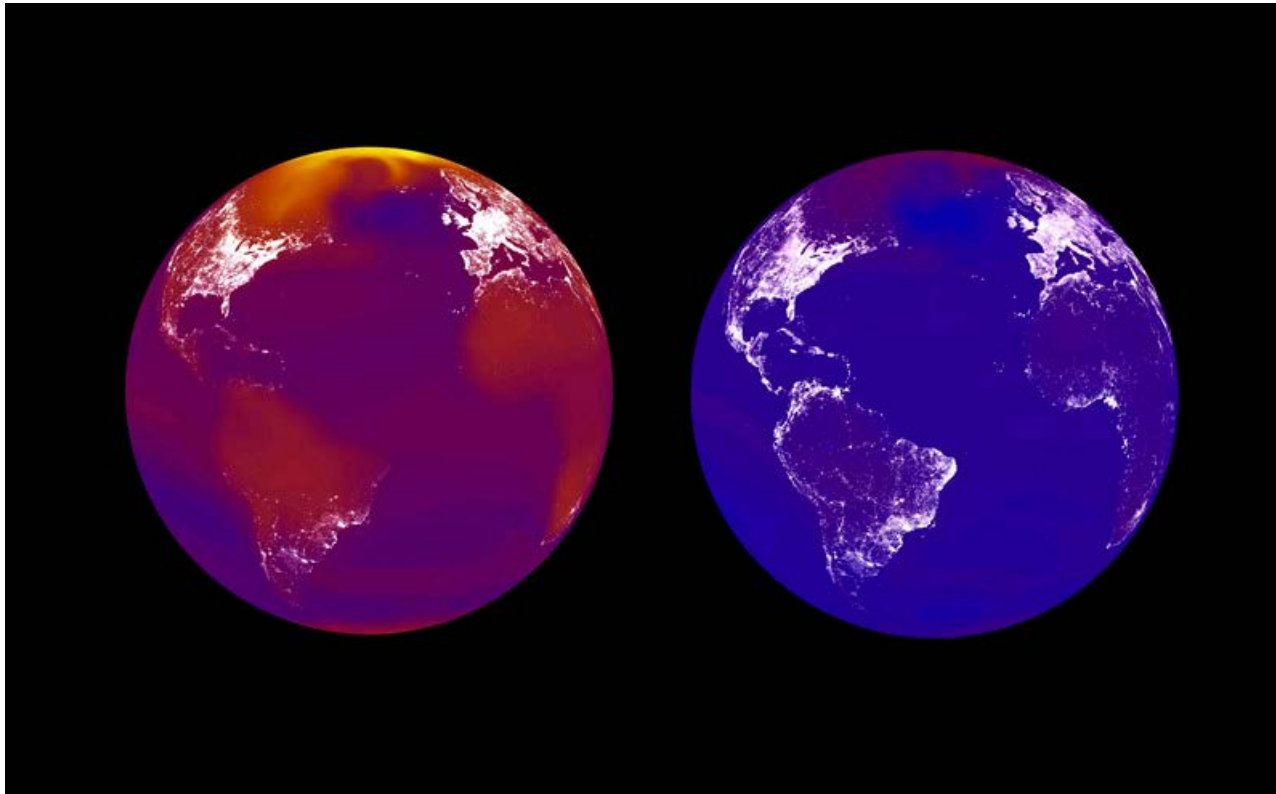
September 2015



Source: Stimmen der Zeit, 9, 233

The Anthropocene

Humankind changes the planet – also the face of the Earth?



Difference between RCP 8.5 and RCP 2.6

<http://web.stanford.edu/~mburke/climate/images.html>

The face of the Earth



<http://s.ngm.com/2011/03/anthropocene/img/dubai-aerial-anthropocene-615.jpg>



<http://www.economist.com/node/1874174927>

“You maniacs! You blew it up!”

Why take responsibility?

“Disregard for the duty to cultivate and maintain a proper relationship with my neighbor, for whose care and custody I am responsible, ruins my relationship with my own self, with others, with God and with the earth.”

Pope Francis, encyclical letter *Laudatio Si* [70]



Cain slaying Abel

Peter Paul Rubens
The Courtauld Gallery, London