

Presentation Stern Report Summing Up

It also is recommended by the UN organization IPCC (Intergovernmental Panel on Climate Change) some methods to reduce the emissions of global warming gases.

More efficient conversion of fossil fuel.

Switching from “high-carbon” to “low-carbon” fossil fuel

Decarbonisation of flue gases and fuels, coupled with carbon dioxide “storage”

Increased use of renewable energy sources, i.e. biomass, micro-hydro, wind, solar.

Increased use of nuclear power

It is interesting to see that IPCC also recommend use of nuclear power as a means to reduce the emissions of global warming gases. The statement is done by Robert Watson, the chairman of the UN Intergovernmental Panel on Climate Change (IPCC) and is told the first day of the two-week COP6 climate change conference in The Hague in the end of 2000.

FNs klimatpanel IPCC deklarerar i sin tredje delrapport av fyra av IPCCs fjärde samlade bedömning 2007 följande åtgärder som bör vidtas för att minska växthuseffekten (Källa Miljöaktuellt nr. 4 Maj 2007) :

- Ändrade lagar
- Ekonomiska styrmedel
- Slopande av stöd till fossil energi
- Utsläppshandel
- Utveckling av ny teknik
- Biobränslen
- Kärnkraft
- Inneslutning av koldioxidutsläpp
- Effektivare energianvändning
- Ändrade konsumtionsmönster
- Effektivisering av djurhållning



Sternrapporten explains that year 2050 the climate changes will cost the world 51 000 000 millions SEK (6 000 000 millions USD) annually which is the same sum as the cost for one of the World Wars or for the complete depression during the 30th.

This is 20% annually of all GNP in the World. But if the World acts already now (2006) it only will cost 1-3% annually of the GNP in the World.

Stern is a former Chief Economist of the World bank.

(Source : Dagens Miljö number10 2006)



Stern-report : Result on global GNP if actions are taken immediately (-1%)

Part III: The Economics of Stabilisation

10 Macroeconomic Models of Costs

Overall, the expected annual cost of achieving emissions reductions, consistent with an emissions trajectory leading to stabilisation at around 500-550ppm CO₂e, is likely to be around 1% of GDP by 2050, with a range of +/- 3%, reflecting uncertainties over the scale of mitigation required, the pace of technological innovation and the degree of policy flexibility.

Stern-rapporten : Result on global GNP if no actions are taken (-20%)

PART II: The Impacts of Climate Change on Growth and Development

6 Economic modelling of climate-change impacts

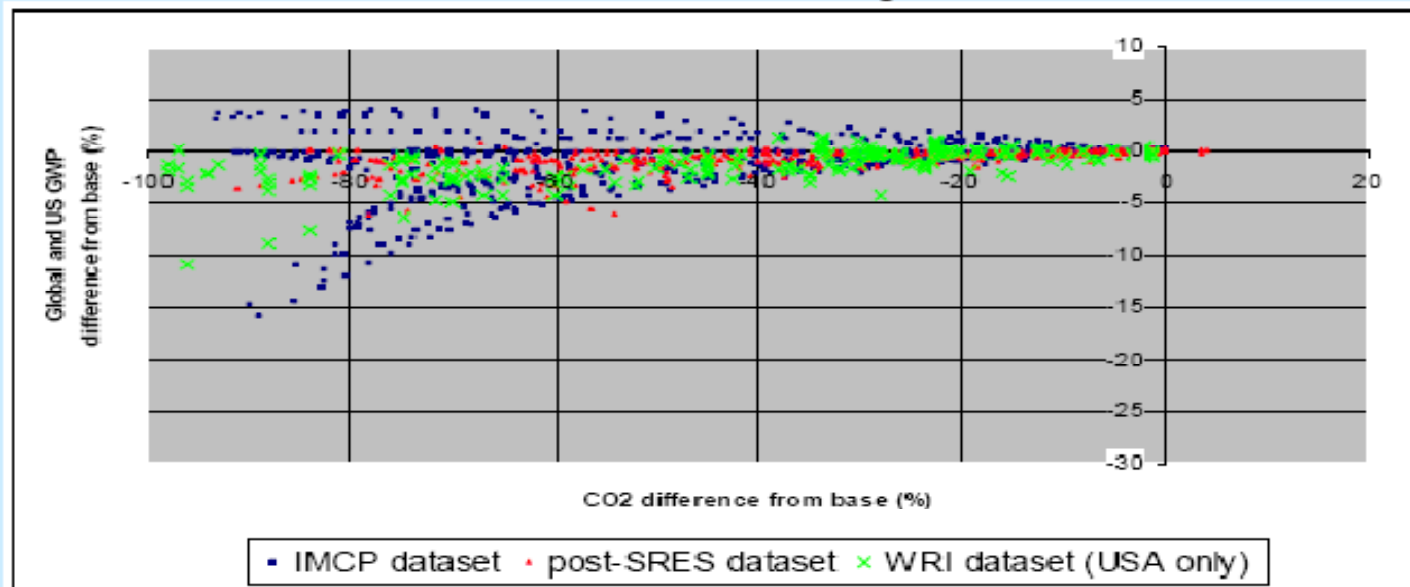
Putting these three additional factors together would increase the total cost of BAU climate change to the equivalent of around a 20% reduction in current per-capita consumption, now and forever. Distributional judgements, a concern with living standards beyond those elements reflected in GDP, and modern approaches to uncertainty all suggest that the appropriate estimate of damages may well lie in the upper part of the range 5 – 20%. Much, but not all, of that loss could be avoided through a strong mitigation policy. We argue in Part III that this can be achieved at a far lower cost.

Stern-rapporten : Result on global GNP at different reductions of CO₂-emissions

Part III: The Economics of Stabilisation

Figure 10.1 Scatter plot of model cost projections

Costs of CO₂ reductions as a fraction of world GDP against level of reduction



Source: Barker et al. (2006)

3 How Climate Change Will Affect People Around The World

Stern-rapport : Result on global GNP if no actions are taken (-20%): It may be mentioned :

- Melting glaciers – more draught etc..
- Declining crop yields
- Ocean acidification
- Rising sea levels
- Malnutrition and heat stress (malaria and different deceases etc..)
- Permanently displaced people (200 million)
- Depletions of 15-40% of all specimens at only 2% increase of global temperature

Part II: The Impacts of Climate Change on Growth and Development

Table 3.1 Highlights of possible climate impacts discussed in this chapter						
Temp rise (°C)	Water	Food	Health	Land	Environment	Abrupt and Large-Scale Impacts
1°C	Small glaciers in the Andes disappear completely, threatening water supplies for 50 million people	Modest increases in cereal yields in temperate regions	At least 300,000 people each year die from climate-related diseases (predominantly diarrhoea, malaria, and malnutrition) Reduction in winter mortality in higher latitudes (Northern Europe, USA)	Permafrost thawing damages buildings and roads in parts of Canada and Russia	At least 10% of land species facing extinction (according to one estimate) 00% bleaching of coral reefs, including Great Barrier Reef	Atlantic Thermohaline Circulation starts to weaken
2°C	Potentially 20 - 30% decrease in water availability in some vulnerable regions, e.g. Southern Africa and Mediterranean	Sharp declines in crop yield in tropical regions (5 - 10% in Africa)	40 - 60 million more people exposed to malaria in Africa	Up to 10 million more people affected by coastal flooding each year	15 - 40% of species facing extinction (according to one estimate) High risk of extinction of Arctic species, including polar bear and caribou	Potential for Greenland Ice sheet to begin melting irreversibly, accelerating sea level rise and committing world to an eventual 7 m sea level rise

Table 3.1 Highlights of possible climate impacts discussed in this chapter						
Temp rise (°C)	Water	Food	Health	Land	Environment	Abrupt and Large-Scale Impacts
3°C	In Southern Europe, serious droughts occur once every 10 years 1 - 4 billion more people suffer water shortages, while 1 – 5 billion gain water, which may increase flood risk	150 - 550 additional millions at risk of hunger (if carbon fertilisation weak) Agricultural yields in higher latitudes likely to peak	1 – 3 million more people die from malnutrition (if carbon fertilisation weak)	1 – 170 million more people affected by coastal flooding each year	20 – 50% of species facing extinction (according to one estimate), including 25 – 60% mammals, 30 – 40% birds and 15 – 70% butterflies in South Africa Onset of Amazon forest collapse (some models only)	Rising risk of abrupt changes to atmospheric circulations, e.g. the monsoon Rising risk of collapse of West Antarctic Ice Sheet Rising risk of collapse of Atlantic Thermohaline Circulation
4°C	Potentially 30 – 50% decrease in water availability in Southern Africa and Mediterranean	Agricultural yields decline by 15 – 35% in Africa, and entire regions out of production (e.g. parts of Australia)	Up to 80 million more people exposed to malaria in Africa	7 – 300 million more people affected by coastal flooding each year	Loss of around half Arctic tundra Around half of all the world's nature reserves cannot fulfill objectives	
5°C	Possible disappearance of large glaciers in Himalayas, affecting one-quarter of China's population and hundreds of millions in India	Continued increase in ocean acidity seriously disrupting marine ecosystems and possibly fish stocks		Sea level rise threatens small islands, low-lying coastal areas (Florida) and major world cities such as New York, London, and Tokyo		
More than 5°C	The latest science suggests that the Earth's average temperature will rise by even more than 5 or 6°C if emissions continue to grow and positive feedbacks amplify the warming effect of greenhouse gases (e.g. release of carbon dioxide from soils or methane from permafrost). This level of global temperature rise would be equivalent to the amount of warming that occurred between the last age and today – and is likely to lead to major disruption and large-scale movement of population. Such "socially contingent" effects could be catastrophic, but are currently very hard to capture with current models as temperatures would be so far outside human experience					

However, the green house effect is not completely negative. It is useful in some extent. **Without the greenhouse effect, the Earth would be a cold and frozen globe with a mean temperature of -18°C compared to present $+15^{\circ}\text{C}$**



Värme hotar vinproduktionen. Ett förändrat klimat kan reducera världens vinodlingsareal med 80% till slutet av vårt sekel. Ingen vågar starta nya vinodlingar i traditionella vindistrikt. Försök pågår med att utveckla druvor som tål högre värme.



Räddningen kanske finns i nordligare länder?