

## A Planet of Opportunities (and Risks)

by Walter R. Stahel

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### Man-Made CO<sub>2</sub> Emissions

Global Climate Change has hit the political headlines again. But 15 years after the 1992 UN conference in Rio de Janeiro, the topic now is CO<sub>2</sub>-emissions, whereas it was called energy savings in the 1970s, and resource productivity in 1992.

Principle 8 of Agenda 21 - the report of the 1992 UN conference - already clearly summarised the 'mother of all environmental problems': the richest quintile of the world population (top in figure 1) consumes 80 per cent of all resources, energy and material. This was highlighted in the champagne glass shown on the right (fig. 1). The essence of this diagram on Global Economic Disparities is still valid today, 15 years later.

Figure 2 shows CO<sub>2</sub> emissions in tonnes per capita in 2003. China (2.2) emits half as much as the world average (4.4); Sweden, Finland and Norway emit roughly 7 tonnes pc, Switzerland (the red column), Germany and Denmark around 11. Australia and Canada emit 14.6, the USA 21 tonnes of CO<sub>2</sub> per capita. But the CO<sub>2</sub> debate (including Kyoto) ignores the per capita consumption of resources.

These figures confirm the champagne glass of figure 1. They also show that CO<sub>2</sub> emissions of heating energy are not the culprit – some of the coldest countries have relatively low per capita CO<sub>2</sub> emissions. The use of renewable sources of energy, such as wood to heat buildings, standards of insulation and differences in lifestyle, however, may play a major role.

The quality of mobility, such as public transport versus private transport, and the type of vehicles and fuels used, play another major role – and prevention may be more difficult. The third factor of importance being Industry, which is entirely different kettle of fish.

Figure 1:  
Global Economic Disparities

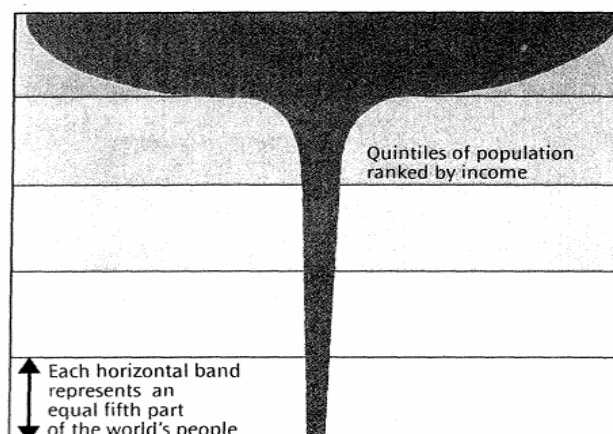
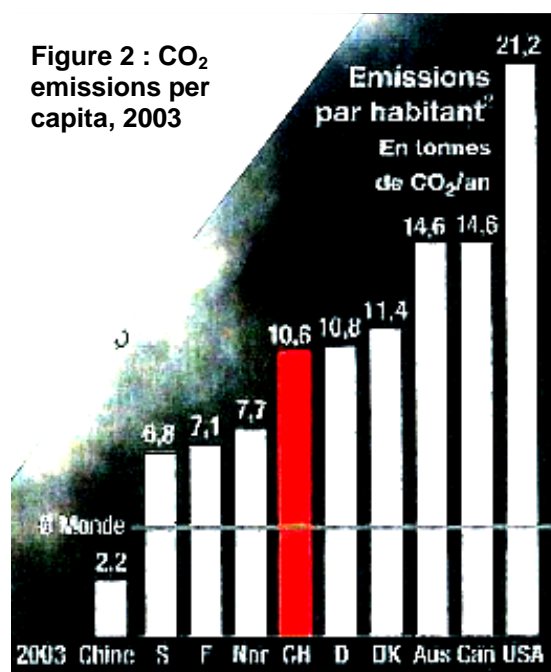


Figure 2 : CO<sub>2</sub> emissions per capita, 2003



The enemy this time is ourselves, the weapons are the choices we make, such as BAT. What can an insurance company do? What can governments do?

***If we did all the things we are capable of,  
we would literally astound ourselves !***

Thomas A Edison

### ***What can be done?***

The basic rule of sustainable resource use is: prevent losses and waste; reduce by using Best Available Technology (BAT); re-use physical assets and recover waste heat and energy; substitute renewable for non-renewable energies – in this order. And in general: avoid vicious circles – do not heat with one hand (e.g. lighting) and cool with the other (air conditioning)!

Example of energy-loss prevention: the stand-by energy consumed by office equipment in Switzerland represents 17 times the production of photo-voltaic (solar) electricity! Banning stand-by devices thus has a much higher return on investment than investing in solar power!

### ***What can insurance companies do?***

BAT in mobility is one issue: Honda and Toyota lead the way for the world's top eight automakers in terms of lowering greenhouse gas emissions and smog-forming pollution, according to a survey conducted by the Union of Concerned Scientists.<sup>1</sup> The car makers preferred by many corporations are bottom of the list - and public transport is the absolute winner: 44 grams of CO<sub>2</sub>/passenger-km in Germany, only a fraction in Switzerland thanks to hydroelectricity! I am aware of one reinsurer based in Zurich that provides financial incentives to employees who buy a hybrid car, and would like to hear from other insurance companies' actions to avoid and reduce CO<sub>2</sub> emissions.

The second issue is BAT in buildings. The most advanced houses and buildings today are designed as 'power stations', in other words they produce more energy than they consume. This can be achieved by a combination of 'reduce', 'BAT' and 'avoid vicious circles' (for instance the combination of heat emitting equipment and air conditioning). White LED lighting, for instance, uses a fraction of the electricity of traditional energy-saving lighting but is hardly in use so far.

Air conditioned Computer Centres are a classic vicious loop! Alternatives, such as water cooled computers, existed some time ago. Other liquids could do the job more efficiently, heat could be recovered and put to a positive task.

A huge amount of energy is also embedded in materials used to make equipment, infrastructures and buildings. A service-life extension of any 'good', from cars to buildings, corresponds to a prevention of substantial CO<sub>2</sub>-emissions (roughly 2 tons of CO<sub>2</sub> per ton of product re-used)!

Apart from CO<sub>2</sub>, there is the issue of water. The same basic principles of resource use apply (see above). And solutions exist, such as: waterless urinals (*prevent*), drip irrigation (*reduce*), toilet flushes and gardening (*re-use* of collected rainwater instead of drinking water).

Insurers have additional opportunities in investments and underwriting, to foster e.g. companies selling clean technologies and companies with a high value-per-weight ratio,<sup>2</sup> as well as joining emerging alliances to promote resource efficiency.<sup>3</sup>

### ***What can governments do?***

Pakistan, Italy, Bolivia, Japan are world leaders with regard to the numbers of CNG (Compressed Natural Gas) cars, and India with regard to CNG vehicles - the cleanest mode of combustion. And Brazil leads the world in bio-ethanol, a CO<sub>2</sub> neutral fuel.

Europe's new energy policy aims to curb dependence on oil and gas imports, while ensuring stable supplies of fossil fuels for the future and a reduction in total carbon emissions.

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<sup>1</sup> The survey ranks automobiles on two factors: emissions of smog forming pollution (nitrogen oxides (NOx), and nonmethane organic gases (NMOG)), and greenhouse gas emissions. The scores are weighted across models and for the number of each type of car sold to achieve an overall rank for each manufacturer.

<sup>2</sup> On the last subject see *The Performance Economy*, summarised in the editorial of the November 2006 issue of this newsletter, also <http://performance-economy.org>.

<sup>3</sup> In Europe for instance the Resource Efficiency Alliance proposed by European Partners for Environment, [www.epe.be](http://www.epe.be)

Shifting tax burdens from labour to environmentally damaging activities is one of the main options of a new Green Paper launched by Commissioners Dimas and Kovacs.

This is a proposal from the 1980s to correct a 'vicious loop': *tax what is undesired (waste and resource consumption), not what is desired (jobs)*! Will it work this time? The Green Paper recognises that EU unanimity rules on taxation limit the potential influence of the Union on member states. The European Environmental Bureau called the Green Paper 'too timid'. It had hoped that the Commission would take stronger leadership and suggested that member states be urged to agree "on a 10 per cent shift in tax income in ten years, from labour to energy and environment, and agree on a minimum level of co-ordination on how to achieve it".

One solution for governments is PFI, Private Finance Initiatives (see Editorial of the Nov 06 issue). The world's urban infrastructure needs a US\$40 trillion makeover, according to a recent Booz Allen Hamilton survey. Cities everywhere face gridlock and obsolescence on the one hand, and competition for global business and wealthier citizens on the other. The solution: reinvigorate electricity, water, and transportation systems by integrating finance, design, governance, technology and giving it a market price by shifting it to the business sector (see also Resilience Report on: <http://www.strategy-business.com/resilience/rr00045>).

### Health and Ageing in a Time of Changing Climate

Hot summers could become a regular feature of European life as global warming leads to frequent heatwaves, climate change experts warned. "*We might have every other year a summer as hot or hotter as the summer 2003,*" said Andreas Fischlin of the Swiss Federal Institute of Technology in Zurich, coordinating lead author for the ecosystems chapter of the latest intergovernmental panel on climate change report (IPCC).

In Europe, the heat wave of August 2003 killed some 70,000 people, mostly elderly, victims of dehydration. However future heat waves need not be so deadly if authorities and individuals take sufficient precautionary measures, which could cut fatalities by 80 percent from the 2003 levels. This message touches on two subjects: 'accessibility' in the area of health and ageing, and cutting the link between ozone and heat exposure in outdoor occupations and premature mortality.

Accessibility: people need access to local health services as well as to food and water. In many rural areas, this basic need can only be fulfilled if people have a car – public transport and home delivery services do not exist. Whose job is it to provide this in isolated areas?

Ozone: the problem of heat and ozone in outdoor occupations concerns workers on building sites as much as farmers and outdoor sports – and such economic sectors as tourism in countries such as Spain and Greece in Europe, which might also be hit by an increasing water shortage. Many elderly Brits have moved to Spain in the 1990 to enjoy the warm climate, multiplying this problem.

### A Planet of Opportunities? A Shift in Political Power Lies Ahead !



At the beginning of the 3<sup>rd</sup> Millennium, the big powers follow different strategies to conquer the world. Figure 3 (left) shows China more traditional strategy, of securing its main trade routes to Africa.

It has built two major deep water ports, Hambantota in Sri Lanka and Gwadar in West Pakistan, the latter opening the opportunity of a direct access to the Indian Ocean by building roads and pipelines through Pakistan.

And in 2007, China will probably become the no. 1 shipbuilder worldwide!

At the beginning of the 3<sup>rd</sup> Millennium, the USA is aiming back to the moon by the year 2020<sup>4</sup>, as the international space station has not fulfilled its promises and depends on the space shuttle for supplies - which is to be phased out in 2010. The EU's 'Europe Moon 2000' mission was dropped for financial reasons, but other nations are now looking to the moon as an opportunity.

But the biggest change in geo-political balances might come if and when global climate change happens – the Arctic Ocean! In summer 2006, the North Pole and the North-West Passage, the shortest link between Atlantic and Pacific, were free of ice. If this situation becomes standard, it will reduce the distance between Atlantic and Pacific (e.g. Europe and Japan) by 8000 miles for ships of any size. It will jeopardise the economics of the Suez Canal and the extension plans for the Panama Canal, but greatly reduce the hazards to World shipping in the Malakka Strait.

A look at the map below shows the winners of an open navigation on the Arctic Ocean: Siberia and Inuit country, to a lesser degree also Alaska and Scandinavia. An economic boom in these areas is probable! Inuit country, the North of Canada, today is inhabited by 4000 Inuit (Eskimos) and 400 Canadian soldiers, with the Inuit population determined to claim their rights to their land and its development for shipping, industry, commerce and tourism. Canada regards the North-West Passage as Canadian territorial waters, the USA declare it international waters.

Figure 4:

The Arctic Ocean is the smallest of the World's five Oceans. Siberia, part of Russia, is on the right; Norway is at the bottom. Canada and Greenland (DK) on the left; Alaska at the top left.

The Bering Strait (BS) leading to the Pacific is on top; the North-West Passage (NWP) crosses Northern Canada vertically on the left.

The Arctic Ocean and its bordering regions especially Russia are a major source for natural gas, oil and mineral ores. Exporting these resources by ship across the Arctic Ocean will make the construction of new infrastructures, such as pipelines through Russia and the Baltic Sea, superfluous.

Map: CIA The World Fact Book



### News from the Accident Iceberg

In 2004, Swiss Re Germany held a conference on 'Vision Zero in Germany'.<sup>5</sup> One the enigma of this conference was the number of permanently disabled casualties from road accidents, which does not appear in national statistics. However, this figure is of crucial importance in comparing casualty figures between rail, road and air transport as it concerns mainly road accidents.

On 21 February 2006, Switzerland published its 2006 road accidents data: 371 deaths (minus 9 per cent), of which 100 pedestrians; and 5,000 seriously injured (of which 800 pedestrians). Of the latter 5,000 people, 1,700 will remain permanently disabled, i.e. unable to earn a living in the future. This

<sup>4</sup> Back to the Moon – but why? Strategic and scientific reasons for the new interest in the moon; NZZ, 18 April 2007, p. B1.

<sup>5</sup> Vision Zero, experts' discussion on 'Vision Zero in Germany?' held on 1 July 2004 at Swiss Re in Munich. Published in the Risk Dialogue Series of the Swiss Re Centre for Global Dialogue. Copies can be ordered from [global\\_dialogue@swissre.com](mailto:global_dialogue@swissre.com)

means that 34 per cent of seriously injured victims of road accidents are disabled for life, a figure which is 4.6 times the number of killed!

Even if these are the figures of one country and one year, the conclusions are clear: with regard to road accidents, the number of people killed is the wrong benchmark to judge human costs!

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