

and those who may be affected by floods in future. The public should be cautioned against attempting to cross flooded roads in their vehicles and advised on how to prevent physical injury and exposure to flood waters or contaminated property during clean up. The public should boil or chlorinate tap water if their water company advises them to do so or if private supplies have been contaminated. Disease surveillance should be increased during floods, and information should be disseminated rapidly to dispel false rumours of contagion or outbreaks. Most importantly, those who provide medical care need to be aware of the increased

medical and mental health needs of people who have experienced floods, which may continue for months and possibly years after the event. For some providers this may not be an easy task because a flood may also have a direct impact on staff and healthcare facilities.

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Fossil fuels, transport, and public health

Policy goals for physical activity and emission controls point the same way

The recent protests in Britain over the price of fuel initially seemed to enjoy public support: any cause that might put more money in the public's pocket is superficially attractive. But our dependence on motor vehicles powered by fossil fuels incurs an array of external costs to the environment and the public's health. Further, the resultant accumulation of carbon dioxide—a greenhouse gas with a very long life—is storing up trouble for us and for future generations.

In 1994 the Royal Commission on Environmental Pollution pointed out that methods of transport had changed dramatically over the previous 25 years. In Britain the average daily distance travelled per person has risen by 75% to around 18 miles.¹ Most of this reflects an increase in the use of cars, amounting to a 10-fold increase in distances travelled over 40 years. This has been accompanied by a decrease in travel by bus, coach, bicycle, and in walking. Transport of freight by road has also increased but at the expense of rail travel. Yet if the external costs of road freight (in terms of accidents, road congestion, air and noise pollution, etc) are calculated and added to the costs of providing and maintaining transport infrastructure, public revenue from heavy goods vehicles contributes only 49-68% of total costs.¹

The potential adverse effects of transport on health include accidents, air pollution, noise, the social exclusion of vulnerable groups, and the development of sedentary lifestyles which lead, for example, to obesity.² Our increasing reliance on private transport has created an urban environment that is unfavourable to walking and cycling. Over the past two decades there has been a marked reduction in the proportion of

children who walk or bicycle to school and a substantial rise in childhood obesity in the United Kingdom and a number of other countries.³ The daily energy expenditure of British adults has declined since the 1950s by the equivalent of 2-3 hours of walking per day. It is no coincidence that the prevalence of obesity—the precursor to many diseases in adulthood that shorten life, particularly high blood pressure, heart disease, and diabetes—has risen markedly in recent decades.⁴ The prevalence of obesity in adults and its rising trend over the past two decades is much less pronounced in the Netherlands than elsewhere in Europe⁵; this probably reflects the fact that the Dutch rely on bicycling, walking, and using trams to travel.⁵

A recent report assessed the contribution of traffic related air pollution to mortality and morbidity in Austria, France, and Switzerland. It used effect estimates from two cohort studies in the United States and found that particulate matter was responsible for about 6% of total mortality. About half of this was attributable to motorised traffic.⁶ Cohort studies suggest that the long term effects of outdoor air pollution are greater than is evident from analyses of daily mortality over time.⁷ Air pollution from traffic may be responsible for the excess number of lung cancers in urban areas that remain after adjusting for smoking.⁸ Although in recent years technical improvements have resulted in reductions in air pollutants related to transport there is no room for complacency, and the government of the United Kingdom has acknowledged that its provisional air quality objectives for fine particles are unattainable in the near term.⁹

The transport sector accounts for 26% of all carbon dioxide emissions in the European Union, and its contribution is rising. The concentration of carbon dioxide in the atmosphere has increased by around one third over the past 150 years, and it is a major cause of the worldwide rise in temperatures and the changes that are occurring in the climate.¹⁰ There is a growing awareness that global warming may have various effects, mostly adverse, on health.¹¹ Although any single event cannot be attributed to climate change with certainty, the recent floods in parts of the United Kingdom are indicative of the type of extreme event which is likely to become more common in the future.

Recognition of the health costs of the present UK policy on transport leads to the conclusion that society must do several things soon. The availability and quality of public transport must be improved, and walking and cycling should be encouraged. This should be done not just to avoid road congestion and reduce air pollution but also to re-establish higher levels of physical activity and to enhance community cohesion by improving opportunities for social interaction.⁵

The use of fossil fuel must be curtailed as newer, renewable energy technologies emerge. There should be greater incentives to develop more energy efficient vehicles and to reduce pollution levels—for example,

by fitting particulate traps to heavy vehicles. A tax on carbon could help the United Kingdom reduce its carbon emissions by about 60% by 2050.¹² The regressive aspect of the tax could be offset by ensuring that well subsidised public transport is accessible to communities that are at a disadvantage either through poverty or by living in a rural area.

Society will benefit from a more efficient, less polluting transport system. Taxes on fuel do not compensate for the damage caused by road transport, but they may provide the resources to develop cleaner options and the encouragement to use them.

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Greenhouse emissions and the changing climate

Negotiators in the Hague must realise that little progress has been made

There is something new about the floods that have ravaged Europe and most recently England this year. For the first time senior politicians and the media have clearly linked flooding to global warming. What would have been regarded a few years ago as irresponsible speculation has moved into the mainstream. Of course, it is foolish to claim that any single event is “caused by global warming”; extreme events are rare by definition and statistics on changes in frequency are complex. But even allowing for the demands of the media and the public for stark, black and white simplification the shift in belief is not without foundation.

It is five years since the Intergovernmental Panel on Climate Change (set up by the United Nations Environment Programme and the World Meteorological Organization) first concluded cautiously that there was “discernible evidence” that some changes in climate had been caused by humans.¹ Since then

evidence has continued to accumulate. Evidence confirms that there is a trend towards an acceleration of global warming, melting glaciers, and increasing frequency of certain kinds of extreme events.^{2,3} Other studies point out that limiting emissions of greenhouse gases often brings about other benefits (such as reducing local air pollution) by reducing the impact of people on the environment.

These facts should strengthen the resolve of the delegates who will assemble in the Hague next week for the sixth conference of the United Nations Framework Convention on Climate Change. They will meet to negotiate rules for implementing the Kyoto protocol—the agreement that sets limits on the emission of greenhouse gases in industrialised countries.⁴ Many scientists and the media have criticised the protocol for being too weak and too narrow, and thus unable to solve the problem.⁵ This argument shows a misunderstanding of the nature of the agreement. The targets are the first