

# Wake Up Calls

**PRINCE EL HASSAN BIN TALAL** calls for immediate action to tackle the world's escalating climate and environmental crises

**O**ur environment is as temperamental and variable as we are – but its wrath speaks louder than the deafening silence with which we address its complaints about how we use and abuse it.

Extreme conditions cry out for extreme measures. The utter devastation inflicted by hurricane Katrina in the USA, and the recent storms and severe floods in Europe, serve as wake up calls for us all to rise to rescue both humankind and the environment.

Just think about the mutual relationship between earth and the sun. The sun emits light energy to heat the earth, which emits back infrared radiation by the natural greenhouse effect. This has made our planet some 30°C warmer than it would otherwise be, essential for life as we know it. The level of natural greenhouse gases that achieve this effect in the atmosphere is less than one per cent: generating more of them, together with increasing other industrial emissions, will disrupt our environment.

## Extremely hazardous

Germs and bacteria cannot be seen with the naked eye but this does not nullify their existence: they manifest themselves in the form of disease. The same holds true for the malevolent gases which are causing changes in the global climate that may be extremely hazardous for mankind. Burning coal, oil and natural gas generates carbon dioxide (CO<sub>2</sub>); agriculture and changes in land use emit methane and nitrous oxide; vehicular exhaust fumes and industrial gases linger in the air; all work collectively to disturb the intricate balance of the interchange between our planet and the sun.

The somewhat brighter side of the story is that oil-fired power stations, smoke from deforestation, and the burning of organic material produce aerosols that reflect sunlight back into space, thereby cooling the earth and countering the greenhouse effect to a certain extent. The aerosols, however, are relatively short-lived compared to the greenhouse gases (GHGs), making their cooling effect insufficient in the long term. They can also cause acid rain and poor air quality.

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Peter Schickel/Still Pictures

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In system dynamics, feedback can be positive (damping change) or negative (reinforcing it). Positive feedback loopholes have been identified within the climate change system. Triggered by GHG emissions, they accelerate the global warming effect and threaten to spiral out of control. Negative feedback, on the other hand, helps to slow down and control climate change.

## Optimal conditions

Climate change is characterised by increasing sea and air temperatures, which cause a decrease of CO<sub>2</sub> absorption. Surface waters are becoming more acid, reducing optimal conditions for planktonic life and thus plankton absorption of CO<sub>2</sub>. The warming also generates high levels of atmospheric water vapour, itself a powerful GHG.

A warming of as much as two degrees could produce ocean level increases of two feet by the year 2050. One billion people – 17 per cent of the world's population – live on land likely to be dramatically changed by the rising waters, with low-lying countries hardest hit. The potential refugee problem will worsen the global situation.

Recent studies suggest that there is a critical point at which positive feedback loops become dominant and render further increases in temperature independent of any reduction ►

in human generated greenhouse gases. Even if we drastically reduce GHG emissions today our planet will continue to heat for decades.

Already 40-50 per cent of the world's population are undernourished and there are 50 million starvation-related deaths each year: 14.6 million of the casualties are children. Meanwhile, 1.5 billion people do not have safe drinking water and twice as many lack basic sanitation.

Factor in the world's ever increasing population (now at 6.25 billion and expected to increase by over 12 per cent over the next 12 years), the rush to modernisation of the developing countries (which account for 98 per cent of the annual population growth) and the increasing energy they will use, and the concept of environmental catastrophe becomes inevitable.

### Enormous stress

Forty per cent of our remaining forests will disappear by the year 2050, and with them, the quality of the air we breathe. Deforestation, overgrazing and poor farming practices result in soil erosion. When only 60.5 per cent of the world's land mass is suitable for agriculture and topsoil cannot be replenished, this translates to worldwide famine in 40 years.

Enormous stress is being put on the Earth's recuperative powers to sustain the world's growing population. Twenty mega cities already have hazardous air quality. Heavy metal levels exceed safe parameters in most cities' drinking water. Over 70 per cent of the 73,000 chemicals now in use have never been tested for their effects on the environment and living organisms – and many, like components of pesticides, are both dangerous and found throughout our food chain.

The condition of the oceans is equally miserable, with oil spills and other contaminants threatening aquatic resources and the major supplies of food they provide. Current garbage disposal methods pose further problems as burning pollutes the atmosphere, landfills contaminate aquifers, and ocean dumping destroys the aquatic environment.

Serious and extensive effort better to understand, analyse and tackle our environmental challenges and their underlying causes has blossomed in many invaluable initiatives and reports – including, to mention but a few: the “Planetary Contract” of the Global Marshall Plan by Dr. Radermacher; the Meadows Report presented to the Club of Rome on the “Limits to Growth”; the Trans-Mediterranean Renewable Energy Corporation (TREC); and the proposal for “A Community of Energy, Water and Environment” for the Middle East, North Africa and the European Union, discussed in Prague in October.

### Fossil fuel

Scientists, policy-makers and industry must continue to toil together to address this formidable multitude of issues, and to try to find alternative forms of clean, sustainable, affordable and tradable energy. Saving fossil fuel is a lot cheaper than burning it for the environment and, in the long run, for us too. Research is ongoing, and endless proposals to produce hydrogen, wind, solar, photovoltaic and bio- energy are being drafted and tested as we continue with our carbon-rich lifestyle.

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As consumers, we can set the requirements, the demand and policy for maintaining life on our planet for the coming generations, by altering our routines of acquisition and consumption and by opting for less now in order to have more in the future. We must adopt a strongly negative carbon culture, and improve end-use efficiency as the fastest and most lucrative way to save energy. Science is a Godsend because it can not only predict disasters, but contain them.

In “The Meridian Report” of July 2005 David Wasdell, director of the Meridian Programme, wrote:

“We cannot afford any further delay in effective action. Any procrastination increasingly risks global bankruptcy in financing the needed intervention, and massive human suffering in carrying it through to completion. It also threatens our ability to regain control before the system is overwhelmed by the positive feedback loops and drifts inexorably into runaway global warming. To allow the collusion of vested interests of the social, economic and political systems to continue to hijack the world and hold it to ransom for the sake of short term profit and national protectionism, would be an act of collective suicide. I do not wish to believe that humanity is that mad.”

Let's act now before we become nomads following a mirage in search of an oasis in the middle of a desert ■

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