

Global warming is not the only problem now facing mankind, but it is one of the most serious with which humanity has ever been confronted. Others such as overpopulation – as predicted by Malthus in the 19th century – did not occur as forecast. Water shortages, already plaguing many regions of the world, may also probably be tackled successfully.

There are however cases where civilizations – such as those of Easter Island and some large Mayan Yucatan settlements – have perished as a result of overexploiting natural resources. With global warming we are again testing the limits of the carrying capacity of the environment on which we depend, changing the composition of the atmosphere with unknown consequences. The jury is still out on whether civilisation will survive it.

The irony is that we know precisely what is causing global warming: the massive injection of gases from human activities into the atmosphere, mainly CO² (carbon dioxide) from the burning of fossil fuels. The solution is therefore clear: to reduce such emissions, we must ‘decarbonize’ the present energy system. This, of course, is more easily said than done, because the extraordinary progress witnessed in the 20th century was based essentially on the large-scale, widespread use of fossil fuels. Coal, oil and gas became essential for mobility, electricity generation, heat production and all kinds of chemical and industrial products.

Consumption patterns

Fossil fuels will not be abandoned easily, not only because they are relatively cheap and easy to get, but because our consumption patterns are intimately connected to them.

There are therefore three options:

1. to change consumption patterns radically, which is difficult and not a realistic option except under a very severe crisis;
2. to adapt to the effects caused by climate change, which is a very asymmetric option in social terms

No Reason To Wait

JOSÉ GOLDEMBERG calls on both developed and leading developing countries to take immediate action



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because the rich may manage to do this more easily than the poor, thus aggravating thus the serious problems of underdevelopment ;

3. to reduce drastically the emissions of greenhouse gases through using fossil fuels more efficiently and switching strongly to renewable energies.

The third option is the only one really being implemented. Some other new technologies, such as

carbon capture and storage or fuel cells might also contribute but are still under development.

In industrialized countries there is already a clear ‘decarbonization’ of the economy: carbon emissions are not growing as fast as the gross domestic product (GDP): in other words, economic growth has been ‘decoupled’ from carbon emissions, as the energy system becomes less dependent on fossil fuels. In developing countries, however, the growth of these emissions follows GDP growth more closely, a trend aggravated by the intensive use of coal in China and India.

The 1992 United Nations Framework Convention on Climate Change (UNFCCC) reflects that asymmetry and incorporates the political principle of “common but differentiated responsibilities”, through which industrialized countries agree that they should take the lead in reducing emissions. However, such compromises have been often used in international negotiations as an excuse for inaction – except by the European Union (EU) which has taken the Kyoto Protocol seriously and has been using its ‘flexibility mechanisms’ to fulfill its commitments. However, the EU countries produce only 15 per cent of the world’s greenhouse gas emissions.

The EU has also adopted targets and timetables through directives, for increasing the share of renewable sources in the energy matrix, in consonance with the proposals put forward in the 2002 Johannesburg World Summit for Sustainable Development. This indicates that there is nothing sinister about targets and timetables: indeed, governments operate all the time under strict budgets and similar parameters. The absence of such tangible goals – as is the case in the United States which has not joined the Kyoto Protocol – leaves without guidance the private sector, which ultimately will have to conduct the activities required.

There is no novelty in establishing and pursuing targets and timetables, as has successfully demonstrated, for example, by both the Acid ▶

Rain Programs (which put caps on sulphur dioxide (SO₂) and nitrogen dioxide (NO₂) emissions from thermal plants) or the 1987 Montreal Protocol (which phased out several groups of halogenated hydrocarbons that deplete the ozone layer, such as CFCs).

Commitment period

We must urgently extend the present regime to its second commitment period beyond 2012, and achieve more reductions in greenhouse gas (GHG) emissions. Proposals to that end are being discussed by national governments. But it is essential that the US (which is responsible for 25 per cent of all global GHG emissions) joins and that the leading emitters in developing countries are attracted to adhere to emission mitigation policies, possibly through voluntary commitments under the UNFCCC rules: They would not have to encompass all sectors but basically those where real success can be achieved. For example, a commitment from Brazil to reduce deforestation in the Amazon would be a major step forward, as would ones from China and India to reduce their large emissions from coal combustion through, for example, improved efficiency standards and using last generation technologies for electricity generation. The widespread use of biofuels for transport (ethanol replacing gasoline, biodiesel substituting for diesel oil),

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and other types of modern biomass as an energy source, is another very important option to be considered by all countries, no matter whether they produce them domestically or replace unsustainable imports of fossil fuels.

Implementing such measures will ultimately depend on action

taken by governments at different levels. International treaties will only succeed if they carry heavy sanctions for non-compliance (as does the Non Proliferation Treaty), otherwise even mandatory clauses are voluntary in reality. Yet many municipalities, states and even countries are taking action to reduce their GHG emissions, thanks to pressure from non-governmental organizations and the sheer enlightenment of some governmental actors.

In 2004 the California Air Resources Board, for example, adopted standards that aim to reduce GHG emissions from cars and light trucks by 18 per cent in 2020 and 27 per cent in 2030 – estimated to cut emissions by 30 million tons of carbon dioxide equivalent (tCO₂ eq) a year by 2020. Stricter motor vehicle

emission standards are also expected to cut ozone-forming pollution by about 6 tons per day in 2020.

In São Paulo State, Brazil, the use of ethanol blended in gasoline (gasohol) avoided emissions of nearly 7 million tCO₂ eq in 2003. The use of ethanol, which is now less expensive than gasoline, has also reduced annual fuel costs to consumers by as much as \$7.5 billion, as well as significantly reducing air pollution.

Nations must act more vigorously, and local governments can do a lot to avoid the dire consequences of global warming. There is no reason to wait ■

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