

not have enough cholesterol. The newly emergent E1226V variant could have survived and multiplied better in mosquitoes, which in turn could have contributed to its rapid spread¹⁰. Mother-to-child transmission, myocarditis hepatitis and extensive dermal lesions were encountered in the current epidemic¹¹.

Humans, laboratory mice, rodents (*Myiostomys albicaudatus*), African vervet (*Cercopithecus aethiops*), Asian monkeys, primates (rhesus monkey *Macaca radiata*, baboon *Papio ursinus*), prosimians (*Galago senegalensis*) and bats (*Tadarida*, *Pipistrellus* and *Scotophilus*) are susceptible to chikungunya virus and develop high titre viremia¹². Antibody to chikungunya virus has been detected in various primates and domestic animals and in other vertebrates¹². Chikungunya virus was isolated from *Culex quinquefasciatus*¹¹. Studies on differential role of *Aedes*, *Culex* and various other species of

mosquitoes and rodents in chikungunya virus epidemiology have to be carried out, to understand the maintenance of virus in nature during the interepidemic period. The recent chikungunya epidemics was restricted to the southern states of India while in the northern states, comparatively only a few cases have been reported.

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Research and development for renewable energy

Recently, an International Conference on 'Energy, Environment and Development' was held in Bangalore, India (14–16 December 2006), organized by The Energy and Resources Institute (TERI, www.teriin.org), the Institute for Sustainable Development and International Relations (IDDRI, Paris) and the Institute Veolia Environment of France (Paris). This was an extremely interesting conference, where the related issues of climate change, global warming and development repeatedly surfaced in various themes and settings.

It was interesting to note that some universities in Europe have made it compulsory for students of all disciplines to attend a one-year course in Ecology, Environment and Sustainability, as a prerequisite for obtaining their final degree, and as a way of increasing the content of sustainability and environment in all professions. While this has not yet become a worldwide practice, one hopes that this will spread further.

At this conference, there was a perceived need to increase the use and develop renewable and clean sources of energy with appropriate pricing, low emissions of greenhouse gases and low amounts of toxic wastes, which could be implemented globally and in time.

To work well, long-term and large funding for Research and Development (R&D) is needed, which may be secured by taxing energy consumption at about 0.5, 1 or 2%. This would ensure a 'critical mass' of scientists and engineers, based in R&D Centres for Renewable Energy in different regions.

This approach could be adopted in several parts of the world to create and fund R&D Centres for Renewable Energy on a long-term basis in the European Union, USA, Canada, Mexico, Brazil, Argentina, Russia, China, India, Israel, Japan, Taiwan, Korea, Australia and South Africa. A special opportunity arises if these R&D centres collaborate with each other in a global strategic alliance to maximize

synergy and thereby achieve considerable scale.

Some sources of renewable energy with a huge and under-utilized potential include geothermal energy, ocean current energy, river current energy, wave and tidal energy, solar and wind energy. There may arise a need for further technological advances to better utilize some of these sources of energy.

This has been proposed to the European Union and the Government of India in December 2006 as a way of initiating such discussions among and within the countries mentioned above. Nevertheless, improving energy efficiency is the next best way of saving energy and reducing emissions of greenhouse gases.

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